

Five-Year Review Report

for

Avenue E Site

Traverse City, Grand Traverse County, Michigan

September 2005

PREPARED BY:

United States Environmental Protection Agency Region 5 Chicago, Illinois

Approved by:

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Ù.S. EPA

Date:

9/20/05

Five-Year Review Report

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List of Acronyms

ARAR Applicable or Relevant and Appropriate Requirement

Avgas plume Aviation Gas Plume

CERCLA Comprehensive Environmental Response Compensation and Liability Act

CIC Community Involvement Coordinator

ICs Institutional Controls

JP-4 Fuel JP-4 Jet Fuel

MCL Maximum Contaminant Level

MDEQ Michigan Department of Environmental Quality
MDNR Michigan Department of Natural Resources

MOU Memorandum of Understanding

mg/kg Milligram Per Kilogram
NCP National Contingency Plan
NPL National Priorities List

ppb Parts Per Billion ppm Parts Per Million

PRP Potentially Responsible Party
QA/QC Quality Assurance/Quality Control
QAPP Quality Assurance Project Plan

ROD Record of Decision

RPM Remedial Project Manager USCG United States Coast Guard

U.S. EPA United States Environmental Protection Agency

μg/kg Microgram Per KilogramVOC Volatile Organic Chemical

Executive Summary

The remedial actions for the Avenue E Superfund Site, located in Traverse City (City), Michigan included the following components:

January 1981, Traverse City water supply lines were extended to homes in the area of contamination. Approximately 26 Avenue E homeowners connected their homes to the new line.

June 25, 1982, a Memorandum of Understanding (MOU) between the USCG and U.S. EPA was signed. This agreement required the USCG to connect any remaining residents in the Avenue E area to the City municipal water supply, and conduct a hydro geological study to determine the source of the groundwater contamination.

In 1983, USCG completed its investigation into the nature and extent of contamination at the site.

In 1985, USCG installed two blocking wells to pump groundwater and prevent further contamination from leaving the site.

In 1987, the State of Michigan and USCG reached an agreement for the USCG to pay the cost of implementing the cleanup of contaminated groundwater and some limited soil vapor extraction for remediation of JP-4 jet fuel in soils.

By 1996, the contaminant levels in the groundwater rarely exceeded the cleanup criteria stipulated in the 1987 settlement.

In 1999, the wells were clean and the groundwater treatment system was shut off.

USCG is currently monitoring the groundwater at the site. Monitoring will continue until October 2005.

The trigger action for this five-year review was the completion date for the Preliminary Close-out Report, dated September 27, 2000. A 5 Year Review is being done at this Site as matter of policy to evaluate the implemented remedy.

The remedy at the Avenue E Site is protective of human health and the environment because the treatment system put into place reached cleanup standards indicated in the 1987 settlement agreement between the State and USCG. Current monitoring results indicate that the contaminants in the groundwater remain below the 1987 settlement agreement clean up criteria.

Five-Year Review Summary Form SITE IDENTIFICATION Site name (from WasteLAN): Avenue E EPA ID (from WasteLAN): MID980791461 Region: 5 State: Mi City/County: Traverse City, Grand Traverse County SITE STATUS **NPL status:** X Final ☐ Deleted ☐ Other (specify) **Remediation status** (choose all that apply): ☐ Under Construction X Operating ☐ Complete Multiple OUs?* ☐ YES X NO Construction completion date: 09/27/2000 Has site been put into reuse? X YES ☐ NO **REVIEW STATUS** Lead agency: X EPA ☐ State ☐ Tribe ☐ Other Federal Agency Author name: Linda Martin Author title: Remedial Project Manager Author affiliation: U.S. EPA Review period:** 12/01/2004 to 09/30/2005 Date(s) of site inspection: 08/10/05 Type of review: ☐ NPL-Removal only X Post-SARA ☐ Pre-SARA ☐ Non-NPL Remedial Action Site ☐ NPL State/Tribe-lead ☐ Regional Discretion **Review number:** X 1 (first) 2 (second) □ 3 (third) □ Other (specify) Triggering action: ☐ Actual RA Onsite Construction at OU #____ ☐ Actual RA Start at OU#_ X Construction Completion Previous Five-Year Review Report ☐ Other (specify) Triggering action date (from WasteLAN): 09/27/2000

Due date (five years after triggering action date): 09/27/2005

^{* [&}quot;OU" refers to operable unit.]

^{** [}Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN.]

Five-Year Review Summary Form, cont'd.

Issues:

1) NONE

Recommendations and Follow-up Actions:

1) NONE

Protectiveness Statement:

The remedy at the Avenue E Site is protective of human health and the environment because groundwater monitoring results indicate that the cleanup standards set in the 1987 settlement agreement have been met and this result is expected to continue.

Other Comments:

None

Five-Year Review Report

I. Introduction

The purpose of five-year reviews is to determine whether the selected remedy at a site remains protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in Five-Year Review reports. In addition, Five-Year Review reports identify issues found during the review, if any, and recommendations to address them.

The Agency is preparing this five-year review pursuant to the CERCLA §121 and the National Contingency Plan (NCP). CERCLA §121 states:

If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.

The agency interpreted this requirement further in the National Contingency Plan (NCP); 40 CFR §300.430(f)(4)(ii) states:

If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.

The United States Environmental Protection Agency (U.S. EPA) Region 5 has conducted a five-year review of the remedial actions implemented at the Avenue E Site, located in Traverse City, Grand Traverse County, Michigan. This review was conducted by the Remedial Project Manager (RPM) from December 2004 to September 2005. This report documents the results of the review.

This is the first five-year review for the Avenue E Site. The triggering action for this policy review is the date for the Construction Completion as shown in U.S. EPA's WasteLAN database: September 27, 2000. This review was done as a matter of policy to evaluate protection of the implemented remedy. No future reviews are required.

II. Site Chronology

Table 1: Chronology of Site Events

Event	Date
Initial Discovery of contaminated drinking water wells.	June 1982
Traverse City extends public water supply lines to homes with contaminated wells	October 1982
Removal Action: connections of 26 homes to the public water supply system	December 1982
USCG completes Nature and Extent of Contamination investigation	1983
USCG installed two blocking wells to pump groundwater to prevent further contamination	1985
Site listed on the NPL	June 1986
State of Michigan and USCG sign a settlement agreement for the actions taken	June 1987
Contaminate levels drop to below cleanup standards stipulated in the 1987 settlement agreement	1996
Treatment system shut off	1999
Site Visit for 5 Year Review	August 2005
Last Groundwater monitoring round to occur	October 2005
5 Year Review	September 2005
MDEQ will continue monitoring off-site monitoring wells MW7, MW8 and MW9	on-going

III. Background

Site Characteristics

The Avenue E Superfund Site is a groundwater contamination plume located in East Bay Township in Grand Traverse County, Traverse City, Michigan. The source of the contamination is located on the U.S. Coast Guard (USCG) Air Station. The plume was located west of the intersection of Parsons Road and Aero Park Drive. It was traced to the southwest corner, under Jacklin Steel Company and Nish-Nah-Bee Industries, then to the northwest corner of an industrial park backlot located southwest of Nish-Nah-Bee Industries. The plume eventually extended to the East Arm of the Grand Traverse Bay (see Attachment 1).

Land and Resource Use

The Site is situated in a residential area, near the Traverse City Cherry Capital Airport and USCG air station in East Bay Township. East Bay Township is located in Grand Traverse County in the north west corner of Michigan's Lower peninsula. The source of the contamination includes the US Coast Guard Air Station and the area immediately to the northeast extending to the East Arm of Grand Traverse Bay.

History of Contamination

In 1980, residents of Avenue E in the township complained of odors and foaming in their well water. Subsequent investigation by the Michigan Department of Public Health (MDPH) and the Michigan Department of Natural Resources (MDNR) revealed the existence of a plume of contamination in the underlying sand aquifer. The plume consisted primarily of hydrocarbons found in petroleum distillates, including benzene and toluene, which had the greatest distribution and highest concentrations, and some solvents.

Initial Response and Basis for Taking Action

The geographic origin of the groundwater contamination appeared to be the Coast Guard Air Station and possibly the adjacent Cherry Capital Airport, located approximately ½ mile up gradient of the affected wells. Activities on the base and the commercial airport required the use of hazardous substances including fueling and cleaning operations for the search and rescue aircraft based at the Air Station and the private and commercial aircraft used at the airport. In operation since the 1940's, the Coast Guard Air Station is located on the former site of a US Navy Air Station.

In response to the initial well water discovery, the 9th Coast Guard District, headquartered in Cleveland, Ohio, paid for city water connections for 26 homes in the affected area. The Coast Guard also contracted and supervised additional investigations complementing those of the MDNR to aid in the planning of a long term response. Results of these investigations concluded the following:

A plume of contamination was found stretching from near the Hanger/Administration
 (HA) building on the Coast Guard property to East Bay. It was approximately 4300 feet

long and from 180 to 400 feet wide. Hydrocarbon spectra of the contamination are consistent with that of 115/145 aviation gasoline. Major components are benzene, toluene, and xylene with a maximum concentration of 3640 ug/l, 553,000ug/l and 5410 ug/l, respectively

- An additional contaminant plume was discovered on the Coast Guard property with an
 apparent origin near the Coast Guard's fueling station. Around the fueling station several
 inches of pure JP-4 jet fuel product were found floating on the water table.
- A third contaminant plume was found along the Coast Guard's south fence line up gradient of the fuel farm area. Possible origins include a 1979 Republic Airlines jet fuel spill and various underground storage tanks in the area that had since been removed.
- The contaminants are located in a sandy aquifer of high permeability. Groundwater flow is to the northeast with a velocity of approximately five feet per day.
- A probable source of the original plume is a fuel spill in 1969 at the Coast Guard base in which about 2500 gallons of aviation gasoline leaked into the ground at a fuel station located under the northwest corner of the new HA building. The second plume may have originated from leaking JP4 fuel tanks at the current fuel station.

To mitigate adverse effects during the investigation, interim responses were implemented. These included providing city water connections to 26 affected residents in the Avenue E area, installing and operating interdiction and purge systems with treatment capability to prevent additional offsite contaminant migration and removing and or repairing tanks at the Coast Guard fueling station.

Soils

The USGS and the University of Michigan (UM) reported numerous measurements of organics in the soils at the Coast Guard Air Station. The UM study found maximum concentrations of 25.4 ug/g benzene, 27.6 ug/g toluene, and 229 ug/g xylene. Analyses were made for seven other hydrocarbons with negative results. Soil borings indicate that much of the organic material was adsorbed on the soil in a 6" to 12" thick layer in the capillary zone immediately above the water table. The UM suggested that this zone is slowly leaking organic contaminants into the groundwater over time and is thus serving as a source for the plume.

Groundwater

The first investigation of the site was conducted by the MDNR in 1982. The State Agency's study objectives were to locate and delineate the contaminant plume, identify and determine the distribution of its component parts and locate the probable source area of the plume. The MDNR drilled 24 wells and two auger holes along Parsons Road and around the lots of Jacklyn Steel and Nish-Nah-Bee Industries.

As a result of the MDNR findings that the Coast Guard Air Station property was part of the suspected source area, the Coast Guard contracted with the United States Geological Service

(USGS) in July 1982 to undertake a study of the areas hydrogeologic conditions. Objectives of this study were:

- 1) to determine the rate and direction of groundwater flow
- 2) locate the source or sources of contaminates
- 3) determine the extent and distribution of contaminates
- 4) evaluate hydrologically suitable locations for installing purge wells should that be necessary

The USGS installed a total of 138 wells on the Coast Guard property, up gradient of the base and down gradient from the base in and around the industrial areas and residential area. Five wells were installed to conduct a pump test for determining aquifer characteristics.

At the request of the Coast Guard, a team from the University of Michigan conducted a study of the site from February through August 1984. Building on the data and results given in the USGS report, the study was to be complimentary to the USGS effort. By providing data and analysis on the time variation of contaminants, the effect of soil adsorptive characteristics on contaminant distribution and movement, and the potential risk posed by the contamination to public health, probable contaminant sources could be determined and remedial action alternatives developed.

A total of 24 wells including 15 existing and nine new wells were selected for analysis based on previous information. These wells were sampled six times at 21 day intervals. Statistical analysis was performed on the data and various data plots were generated. This information was used to provide supporting information for developing response alternatives. A preliminary risk assessment was made for the various chemical components found in the plume. A contaminant transport computer model was used to help determine the possible origin of the plume and the effectiveness of various purge well combinations. Finally several cleanup alternatives were identified and discussed.

In 1984, the 9th District Coast Guard tasked a contractor to design, construct, operate and evaluate ground water treatment techniques using carbon adsorption and air stripping. A sampling program to monitor the plumes response was also developed. In February 1985, the contract was extended to add the following tasks:

selection of a specific cleanup technology design, construction and operation of an interdiction well system design, and installation of monitoring wells design, construct, operate and evaluate full scale carbon adsorption plant specifications, assembly, installation and evaluation of an advanced rotary air stripping and incineration system.

Two interdiction well fields were installed along the eastern boundary of the base to intercept and prevent the flow of contaminants off the Air Station property. A purge well system was placed to directly remove contaminants from the fuel farm area. Carbon adsorption and air stripping treatment systems were also installed and critically evaluated to compare their treatment

effectiveness and cost efficiencies.

In information found in the OSC report dated May 1982, a memo from the remedial response Section Chief indicated that the State of Michigan had nominated the Avenue E site for inclusion on the NPL. Sometime during 1986, discussions were held between the U.S. EPA and State of Michigan regarding the listing of the Avenue E Site on the NPL(hand written notes from discussion held 9/3/86) . Because the USCG had completed an RI/FS like study and had begun implementation of a remedy for the site, no further studies were required and the site was listed on the NPL in 1986.

IV. Remedial Actions

Remedial Objectives

The remedy implemented on the Avenue E Superfund Site was intended to completely halt the flow of any contaminants and fuel from the site and to treat the water extracted by this system so as to remove the fuel related contaminants found. The system would be operated until the contaminant levels were at or below 5 ug/l for six consecutive months. In addition, the remedy involved some soil cleanup to remove a source of the contamination to the groundwater.

Record of Decision

There was no Record of Decision (ROD) for this site. On June 25, 1982, a Memorandum Of Understanding (MOU) between the USCG and U.S. EPA was signed. In this agreement, U.S. EPA agreed to provide funding pursuant to the Comprehensive Environmental Response Compensation and Liability act (CERCA) to connect the remaining residents in the Avenue E area to the city water supply. The agreement required the USCG to conduct hydro geological studies to determine the source of the groundwater contamination and if studies showed the USCG to be responsible, required them to reimburse U.S. EPA for the expenses incurred for connecting the residents to the city water supply.

In 1983, the USCG completed its investigation into the nature and extent of the contamination at the site. In 1985, the USCG installed two blocking wells to pump groundwater and prevent further contamination from leaving the property. The groundwater was treated to remove contaminants and discharged to the Traverse City sanitary sewer system. Also in 1985, the US Department of Justice (DOJ) and USCG signed a Consent Order requiring the USCG to study contamination at the site and to recommend cleanup alternatives.

In 1987, an agreement between the State of Michigan and the USCG was negotiated. USCG agreed to pay the cost of implementing the cleanup of contamination emanating from the site. The cleanup involved extraction and treatment of contaminated groundwater. Some of the other remedial actions included enhanced biodegradation using hydrogen perxoide and nitrates to reduce plume contaminates. The USCG also implemented a groundwater sparing with vapor extraction, venting with vapor extraction, soil venting, natural attenuation and surfactant injection and extraction. All of these additional remedial measures helped to reduce the

contaminant source in the soil and speed treatment of the groundwater through the pump and treatment system. The contaminated groundwater was treated by activated carbon prior to discharge to the Traverse City Sewer system. By 1996, the contaminant levels rarely exceeded the cleanup criteria stipulated in the 1987 settlement agreement. In 1999, the wells remained clean.

A Preliminary Closeout Report (PCOR) was completed by U.S. EPA in September 2000. The purpose of the PCOR was to document that all construction activity had been completed at the Site. The PCOR indicated that a 5 year review for this site would be conducted as warranted. However, 5-year reviews are not required by statute, since no actions were taken under CERCLA §121 at this site and, this Review was conducted as a matter of policy.

Remedy Implementation

Institutional Controls

There were no provisions for institutional controls in any of the agreements associated with the clean up and monitoring of this site as the groundwater was to be remediated to unrestricted use.

Groundwater Monitoring Program

Per the Settlement agreement with the State of Michigan, the USCG operated two interdiction fields (pump and treatment systems). There was one at the North of the base and one at the south of the base. They consisted of wells IN2, IN3, IN4, IN5 and IN6 in the North Field (avgas plume) and PP5, PP6, PP7, and PP8 in the South Field (JP-4 field). Each interdiction point had point of compliance wells along the USCG property boundary. The north field point of compliance wells were M56, M1, M4, M3, and M55. The south field point of compliance wells were M22, M61, M62, M63, and M64. In addition the Coast Guard monitored the main avgas plume with wells M12, M24, 26, M30, M31, M54 and M59. There were a number of other wells installed over the course of the project for various reason. In 2000, with consent of MDEQ ¹, the USCG removed wells PP5, PP6, PP7 and PP8. In 2001, with the consent of MDEQ, wells IN2, IN3, IN4, IN5 and IN6 were removed along with the associated piping, manifolds, carbon treatment units, discharge lines for both the north and south interdiction fields. The remaining monitoring wells will be removed after the 10 year post closure period is complete. The post closure period starts in October 2005 after the final round of monitoring data is collected.

While the selected remedy has addressed the original contamination, data collected from July 2001 through October 2004 indicates that benzene is entering the USCG base from an area associated with the Traverse City Cherry Capital Airport rental car property. Benzene can be

¹As of October 1995, the State cleanup program responsibilities were transferred from the Michigan Department of Natural Resources (MDNR) to the new Michigan Department of Environmental Quality (MDEQ).

situation. It is U.S. EPA's understanding that the Airport is currently conducting groundwater investigations and that the State's Leaking Underground Storage Tank (LUST) program will review the results of this investigation and determine if a response action is required by the Airport.

Also, in 2004 MDEQ sampled off- site wells MW7, MW8 and MW9 located in the residential area along Avenue E. MDEQ found levels of Trichloroethylene (TCE) in these wells ranging from 2 to 7 part per billion (ppb). The Maximum Contaminant Level (MCL) for TCE is 5 ppb. The off-site TCE was not part of the 1987 Settlement Agreement. There are several sources in the area for the TCE including a local industry and the airport. At this time, it is unclear who is responsible for the elevated TCE. MDEQ will continue monitoring these wells until levels of TCE fall below MCLs. Data from the 2004 sampling event can be found in Attachment 6.

V. Progress Since the Last Review

This is the first Five-Year Review for the Avenue E Site.

VI. Five-Year Review Process

Administrative Components

The Avenue E Site Five-Year Review was led by Linda Martin of the U.S. EPA, Remedial Project Manager for the Site. John Vanderhoof of the MDEQ, assisted in the review as the representative for the support agency. The review, which began in December 2004, consisted of the following components:

- 1) Community Involvement;
- 2) Document Review;
- 3) Data Review:
- 4) Site Inspection; and,
- 5) Five-Year Review Report Development and Review.

Community Involvement

Activities to involve the community in the five-year review were initiated with communication between the RPM and the Community Involvement Coordinator (CIC) for the Site. A notice was sent to the Traverse City Record Eagle that a five-year review was being conducted. The notice was published on August 5, 2005 and invited the public to submit any comments to U.S. EPA (see Attachment 2). The results of the review and the report were made available at the U.S. EPA Region 5 Offices as well as the Michigan Department of Environmental Quality Cadillac, Michigan Office. No public comments were received during this five-year review.

Document Review

This five-year review consisted of a review of relevant documents including the nature and extent of contamination report, O&M records and monitoring data (See Attachment 3).

Data Review

Groundwater Monitoring Evaluation reports developed for the Avenue E Site by the USCG were reviewed. These reports were prepared as part of the agreement between USCG and the State of Michigan. Sometime around 2000, the State of Michigan no longer required the submittal of formal groundwater monitoring reports. A data table was submitted to the State project manager covering analytical results collected from July 2001 through October 2004 (See Attachment 4). During the site visit, the USCG indicated that two more rounds of data would be collected, August 2005 and October 2005. The sampling event conducted in October 2005 will be the last monitoring event as prescribed by the Settlement agreement.

Site Inspection

The inspection at the site was conducted on August 10, 2005. In attendance were Linda Martin from U.S. EPA; John Vanderhoof from MDEQ; Frank Blaha and Brian Edminston from USCG. The purpose of the inspection was to assess the protectiveness of the remedy and general conditions of the site.

A complete visual inspection of the remedy was conducted by the entire party. The group performed a walk around of the property. All of the equipment and buildings associated with the treatment plant have been dismantled. The monitoring wells being monitored as part of the monitoring program were in good condition.

VII. Technical Assessment

Question A: Is the remedy functioning as intended by the decision documents?

The review of documents, applicable or relevant and appropriate requirements (ARARs), risk assumptions, and the results of the site inspection indicates that the remedy is functioning as intended by the Settlement Agreement entered into by the USCG and the State of Michigan. The system is no longer operating and all equipment associated with the activity have been removed from the Site.

Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of remedy selection still valid?

There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. Land use remains consistent with that at the time of the original Settlement Agreement. The standards for this site are considered protective and significant

progress has been made toward reaching the remedial action objectives for the site. The USCG will complete its final round of sampling as required by the Settlement Agreement it entered into with the State of Michigan.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no other information that calls into question the protectiveness of the remedy.

Technical Assessment Summary

There have been no changes in the physical conditions of the site that would effect the protectiveness of the remedy. There have been no changes in the toxicity factors for the contaminants of concern that were used in the evaluation of Site conditions and there have been no changes to the standardized risk assessment methodology that could affect the protectiveness of the remedy.

Currently soil vapor intrusion is not considered a possible problem at this site. Down gradient monitoring wells placed along Avenue E in the residential area where the plume was traced, had no detectable levels of contaminants of concern associated with the USCG plume.

VIII. Issues

There were no issues that affect the protectiveness of the implemented remedy.

IX. Recommendations and Follow-up Actions

No recommendations or Follow-up actions are required as a result of this Review.

X. Protectiveness Statement

The remedy at the Avenue E Site is protective of human health and the environment because all groundwater contaminants have reached the clean up standards specified in the 1987 agreement between the Coast Guard and MDNR. All active remediation has been completed and monitoring will end in October 2005. The State of Michigan is addressing the concern related to benzene entering the USCG property. This concern is not related to the actions associated with the previously selected remedy at the Avenue E site. The State of Michigan will also continue monitoring 3 off-site wells for TCE. The TCE detection is also not related to the actions associated with the previously selected remedy at the Avenue E Site.

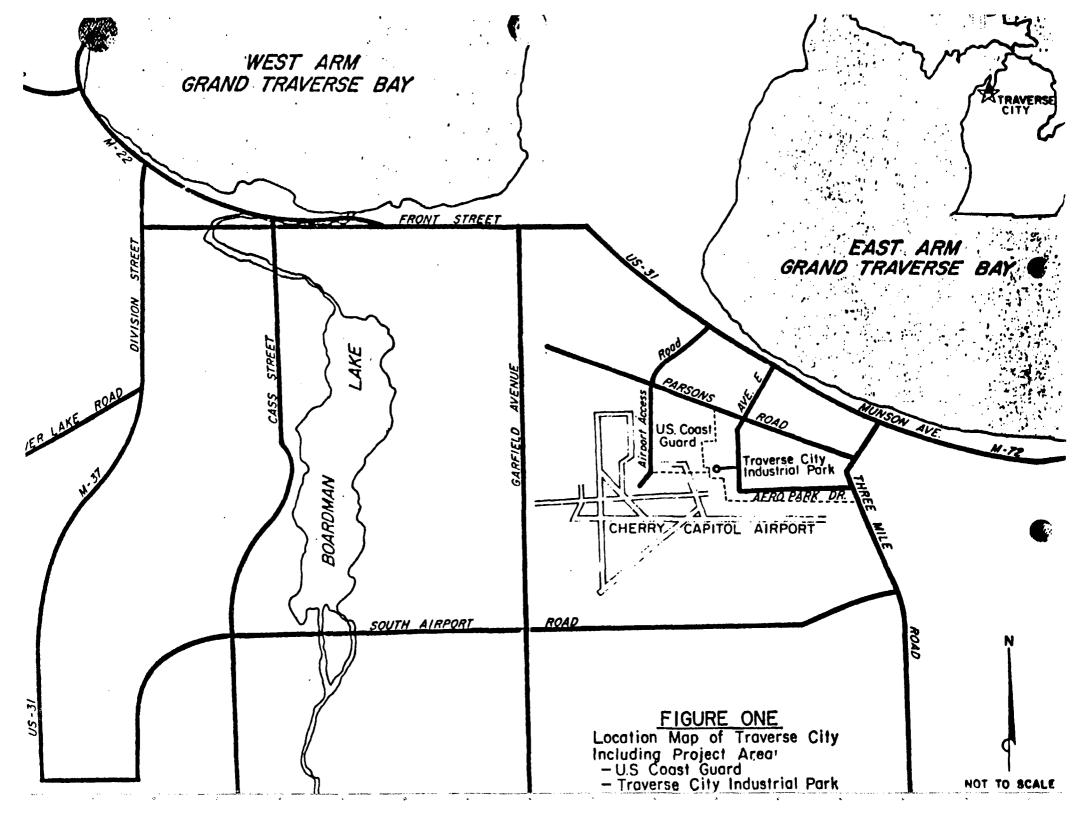
XI. Next Review

Because all remedial actions are complete and monitoring indicates that all clean up goals have

been reached in connection with the 1987 Settlement Agreement, future 5 year reviews are not required.

Attachment 1

Site Map



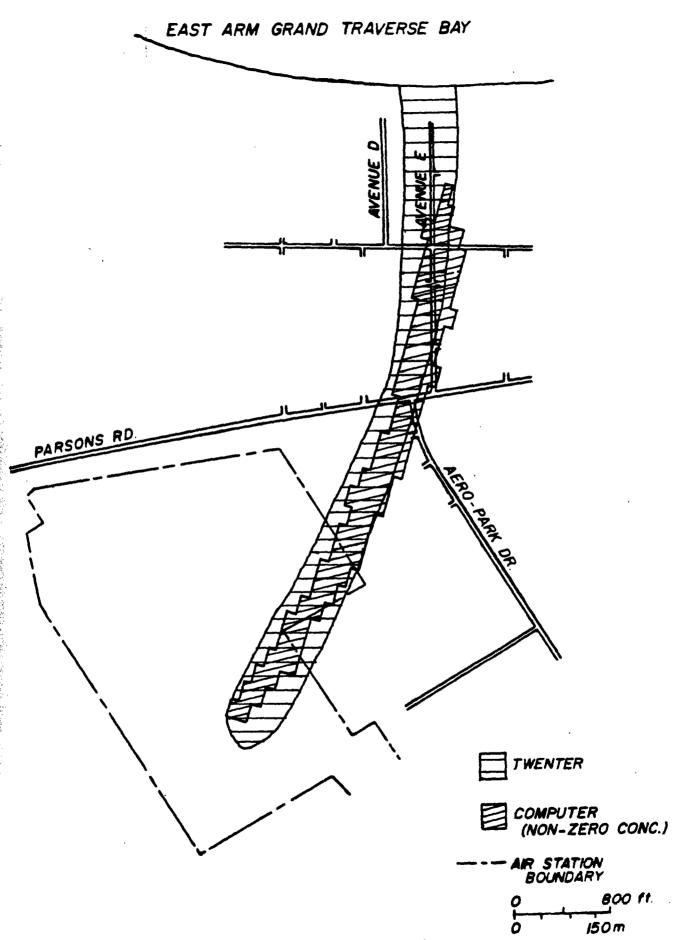


Figure 1. Location of the contaminant plume at the U. S. Coast Guard Station.

Attachment 2

suggests it might help people keep weight off in middle age.

Researchers found that overweight people in their 50s who regularly practiced yoga lost about five pounds over 10 years, while a group in the same age range gained about 13½ pounds over the same period.

Middle-aged people of normal weight generally put on pounds over 10 years, but those who did yoga gained less weight than those who didn't practice yoga.

The link between yoga and weight loss has nothing to

terms of weight," said Kristal, who has practiced yoga for 10 years.

Instead, he thinks yoga helps keep people more in tune with their bodies and eating habits and aware of bad habits, such as eating because of stress, boredom or depression.

"You become very sensitive to the feeling of being stuffed," he added.

The researchers collected data from 15.500 people between the ages of 53 and 57 who were asked about exercise, weight, health and diet histories.



EPA Reviews Cleanup of Avenue E Ground Water Contamination Superfund Site Traverse City, Michigan

The Superfund law requires regular reviews (at least every five years) of sites where the cleanup is complete but hazardous waste remains managed on-site. These reviews are done to ensure that the cleanup, in this case a ground water pump and treat system and the extension of municipal water to residential areas, continues to protect human health and the environment,

Cleanup of the Avenue E site involved construction of two wells to pump out and treat contaminated ground water plumes (underground supplies of fresh water). EPA has found the process worked and reached the cleanup standards called for in an agreement between the state of Michigan and the U.S. Coast Guard. Because of this success the pumps were stopped and a preliminary close-out report was

EPA began the five-year review in early March and is expected to finish it this October. As part of this process, EPA is reviewing all the available data. If you need more information about the background and history of the site contact:

John D. Vanderhoof, EQA 12

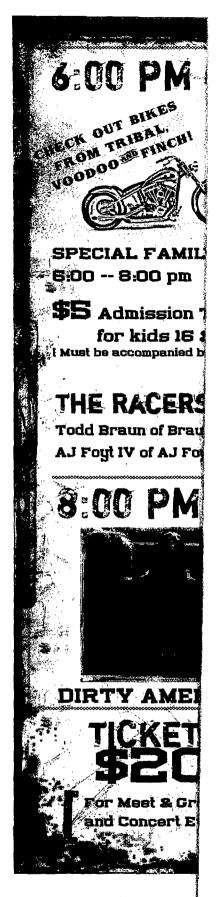
Michigan Department of Environmental Quality Remediation and Redevelopment Division 120 W Chapin St. Cadillac, MI 49601 (231) 775-3960, Ext. 6307; Fax: (231) 775-1511 vanderhj@michigan.gov

After it is finished, the review will be available online at: www.epa.gov/R5Super/fiveyear/fyr_index.html

Further information on the five year review can be obtained by contacting:

Linda Martin EPA Remedial Project Manager 77 W. Jackson Blvd. (SR-6J) Chicago, IL 60604 (800) 621-8431 x 63854, weekdays 10 a.m. - 5:30 p.m.

martin.lindab@epa.gov



Attachment 3

Documents Reviewed

U.S. Coast Guard Traverse City Air Station Groundwater Remediation Project Annual Report (September 1998)

Settlement Agreement Between the USCG and the State of Michigan (June 1987)

Superfund Site Preliminary Closeout Report, EPA, September 2000

OSC Report Immediate Action, EPA, May 1982

Groundwater Investigation of East Bay Township, Traverse City, State of Michigan, March 1982

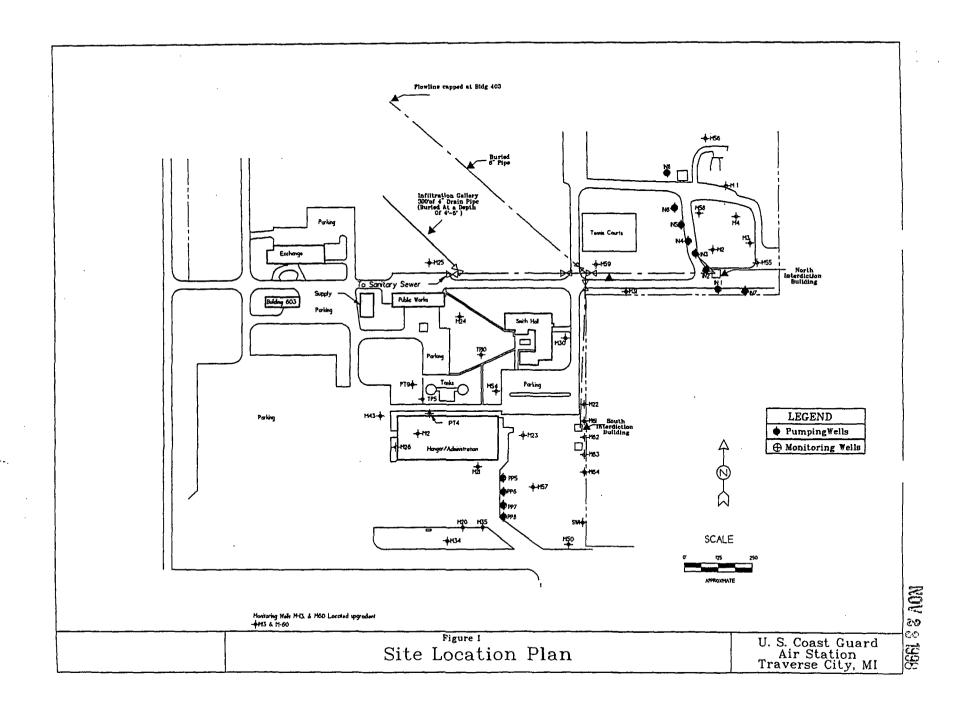
Purge Well Collection System, USCG, May 1985

Draft Report, Remedial Investigation of Groundwater contamination in East Bay Township, Michigan, USCG June 1986

Discussion notes dated 9/3/86, USEPA

USCG Letter to USEPA dated July 28, 1986

Attachment 4



Attachment 5

TABLE 2 Summary of 2001, 2002, 2003 and 2004 Groundwater Monitoring Results USCG Traverse City Air Station Traverse City, Michigan Page 1 of 3

														,						,								
Well			luly 2001		_	toher 200			April 2002			lune 2002			ctober 200			May 2003			tober 200			uly 2004			tober 2004	
Number	Level	Benzene	TCE	PCE	Benzene	TCE	PCE	Benzene	TCE	PCE	Benzene	TCE	PCE	Benzene	TCE		Benzene	TCE	PCE	Benzehe	TCE	PCE	Benzene	TCE	PCE	Benzene	TCE	PCE
M-I	,	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<0.40	<0.15	<040	<0.40	<0.15	<0.40
1	1 DUP	NA	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	NS	NS	NS	NA NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1	li .	<1.0	<1.0	2.1	<1.0	<1.0	1.4	<1.0	<1.0	1.4	NS	NS	NS	<1.0	<1.0	1.6	<10	<1.0	<10	<10	19	<10	NS	NS	NS	NS	NS	NS
	ייוס וו	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<1.0	2.4	<1.0	NS	NS	NS	NS	NS	NS
	111	<1.0	<1.0	1.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	<1.0	<10	<1.0	1.4	<1.0	2 2	<10	< 0.40	< 0.15	1.8	<0.40	< 0.15	19
1 1	אטם ננו	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<1.0	<1.0	1.4	NS	NS	NS	NS	NS	NS	NS	NS	NS
M-3	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<10	<1.0	NS	NS	NS	NS	NS	NS
	JJ	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<10	<1.0	<1.0	<1.0	<10	<1.0	<10	<1.0	< 0.40	< 0.15	< 0.40	< 0.40	< 0.15	< 0.40
1	II DUP	NA	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	NS	NS	NS	NA	NA	NA	NS	N\$	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
•	111	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<10	<1.0	< 0.40	< 0.15	< 0.40	< 0.40	< 0.15	< 0.40
M-4		<1.0	<1.0	<1.0	-10	<1.0	<1.0	-1.0		-10	NS				<1.0	<1.0			~1.0	< .0	<10	<10	NS	NS	NS	NS	NS	NS
)"·~	.	<1.0	<1.0	<1.0	<1.0 <1.0	<1.0	<1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	NS	NS NS	NS NS	<1.0 <1.0	<1.0	<1.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<1.0	<1.0	<1.0	<0.40	<015	<0.40	<0.40	<0.15	< 0.40
	"ii	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	NS	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.40	0.96	<0.40	<0.40	< 0.15	< 0.40
	`''	-1.0	~10	~1.0	~1.0	~1.0	~1.0	11.0	VI.0	~10	143	113	ING	1.0	~1.0	~1.0	~1.0	~1.0	~1.0	1.0	-10	110	10.40	0 70	10.40			
M-13	ı	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 0.40	< 0.15	<0.40	<0.40	< 0.15	<0.40
]	I DUP	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<1.0	<1.0	<10	NS	NS	NS	NS	NS	NS
'	11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<0.40	< 0.15	< 0.40	< 0.40	<0.15	< 0.40
	111	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<10	<1.0	< 0.40	< 0.15	<0.40	<0.40	< 0 15	< 0.40
1 1	יוטס ונו	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	l NS	NS	20	NS	NS	NS	NS	NS	NS	<0.40	<0.15	<0.40	<0.40	< 0.15	< 0.40
M-22	, 1	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<10	<1.0	< 0.40	< 0.15	<0.40	< 0.40	< 0.15	< 0.40
	i I	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.40	< 0.15	<0.40	< 0.40	< 0.15	< 0.40
	111	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 0.40	< 0.15	< 0.40	<0.40	< 0.15	<0.40
l								1						l						İ			1					
M-24	! !	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	S1.0	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	< 0.40	< 0.15	<0.40	< 0.40	< 0.15	0.69
	" l	<1.0	<10	<1.0	<1.0	<1.0	<1.0	\$1.0	<1.0	<1.0	NS	NS	NS	<1,0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<0.40	< 0.15	1.3	<0.40	<0.15	0.91
1 3	II DUP	< 0	<1.0	<1.0	<1.0	<1.0	<1.0	NA -1.0	NA	NA	NS	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS 110	NS	NS	NS 10.40	NS	NS	NS	NS <0.15	NS 04
	111	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	<1.0	ı	<1.0	<0.40	<0.15	0.77	<0.40	NO.13	0 4
M-26	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	< 0.40	< 0.15	< 0.40	< 0.40	< 0.15	< 0.40
['	11	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	< 0.40	< 0.15	< 0.40	<0.40	<0.15	< 0.40
	111	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<0.40	< 0.15	<0.40	< 0.40	< 0.15	< 0.40
	III DUP	NA	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	<1.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
M-31	•	NS	NS	NS .	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS .	NS	NS	NS	NS I	NS	NS	NS
	. 1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.40	<0.15	<0.40	< 0.40	< 0.15	< 0.40
1	יים וו יוטע וו	NA	NA	NA	<1.0	<1.0	<1.0	NA	NA	NA	NS	NS	NS	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	ш	1.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	< 0.40	< 0.15	< 0.40	< 0.40	< 0.15	<0.40
	יווו סטף	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NS	NS	NS	NA	NA	NA	NS	NS	NS	<1.0	<10	<1.0	NS	NS	NS	NS	NS	NS
CRITERI		5	5	5	5	5	5	J	- 5		- 5		5		5			5	- 5		- 5		L				5	5

NOTES:

- 1. All data in micrograms per liter (µy/L)
 2. Boxed data indicates an exceedance of criteria (5 µy/L)

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- 3. TCE: trichloroethylene
- PCE: tetrachlorocthylene
 NS: no sample collected
- 6. <: analyte not detected above provided reporting limit
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TABLE 2 Summary of 2001, 2002, 2003 and 2004 Groundwater Monitoring Results USCG Traverse City Air Station Traverse City, Michigan Page 2 of 3

Well			July 2001			ctober 200	11		pril 2002			June 2002			ctoher 200			May 2003		0.0	tober 200	12		uly 2004		0.	tober 2004	
1.	Level	Benzene	TCE	PCE	Benzene	TCE	PCE	Benzene	TCE	PCE	Benzene	TCE	PCE	Benzene	TCE	PCE	Benzene		PCE	Benzene	TCE	PCE	Benzene	TCE	PCE	Benzene	TCE	PCE
M-47	ı	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 0.40	< 0.15	< 0.40	NS	NS	NS
M-55	ŀ	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	NS	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<10	<10	<1.0	< 0.40	< 0.15	< 0.40	< 0.40	< 0.15	<0.40
ļ	0	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	< 0.40	< 0.15	< 0 40	< 0.40	< 0.15	< 0.40
l	II DUP	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<1.0	<10	<1.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1111	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<10	<1.0	<10	<0.40	<0.15	<0.40	<0.40	<0.15	<0.40
M-56	h l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 0.40	< 0 15	<0.40	< 0.40	< 0.15	<0.40
1	I DUP	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<1.0	<1.0	<1.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
l	п	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<10	NS	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<0.40	<0.15	0.44	<0.40	<0.15	<0.40
	III	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<10	<1.0	<10	< 0.40	<0.15	0.40	<0.40	< 0.15	0.58
ł	III DUP	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.40	<0.15	0.59
M-57	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.5	<1.0	<1.0	NS	NS	NS	<1.0	<10	<1.0	6.9	<1.0	<10	<10	<10	<10	33	<0.15	< 0.40	0.54	<0.15	<0.40
ĺ	(fi	140	<1.0	<1.0	40	<1.0	<1.0	8.7	<10	<1.0	NS	NS	NS	2.5	<1.0	<1.0	7.8	<1.0	<10	- 11	<10	<10	180	<0.15	<0.40	96	<0.75	<2.0
	II DUP	NA	NA	NA	38	<1.0	<1.0	NA	NA	NA	NS	NS	NS	2.9	<1.0	<1.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	111	110	<1.0	<1.0	13	<10	<1.0	4.2	<1.0	<1.0	NS	NS	NS	2.2	<1.0	<1.0	3.3	<1.0	<10	67	<1.0	<10	140	<0.15	< 0.40	85	<0 3x	<10
ł	III DUP	110	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NS	NS	NS	NA	NA	NA	NS	NS	NS	6.9	<1.0	<1.0	160	<0.15	<0.40	NS	NS	NS
м-59	lı l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	ju i	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	<10	<1.0	<1.0	<1.0	<10	0.1>	<1.0	< 0.40	< 0.15	< 0.40	< 0.40	< 0.15	<0.40
	III	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<0.40	<0.15	<0.40	<0.40	<0.15	< 0.40
M-60	,	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<1.0	<1.0	<1.0	85	<10	<1.0	0.1>	<1.0	<1.0	<0.40	< 0.15	<0.40	93	<0.15	<0.40
l .	I DUP	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.40	< 0.15	< 0.40	NS	NS	NS
	11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	67	<1.0	<1.0	330	<1.0	<1.0	25	<10	<1.0	890	< 0.15	< 0.40	170	<1.5	<4.0
1	יועס וו	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	300	<1.0	<10	N\$	NS	NS	NS	NS	NS	NS NS	NS	NS ·
l	1111	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	70	<1.0	<1.0	240	<1.0	<1.0	48	<1.0	<1.0	600	<0.15	<0.40	130	<0.75	<2.0
CRITER	IA .	5	5	5	5	5	5	5	5	- 5	5	5	5	- 5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

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- 3. TCE. trichloroethylene
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- 5. NS: no sample collected
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TABLE 2 Summary of 2001, 2002, 2003 and 2004 Groundwater Monitoring Results USCG Traverse City Air Station Traverse City, Michigan Page 3 of 3

Well			uly 2001		Oc	tober 200	1		prll 2002			une 2002		Ω.	tober 200	,		Viny 2003		0.0	tober 200	3		uly 2004		00	tober 2004	
	Level	Benzene	TCE	PCE	Benzene	TCE		Benzene	TCE	PCE	Benzene	TCE	PCE	Benzene	TCE	_	Benzene	TCE	PCE	Велгене	TCE	PCE	Веплепе	TCE	PCE	Benzene	TCE	PCE
M-61	1	<1.0	0.1>	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	<1.0	<0.1>	<1.0	<1.0	<10	<1.0	<1.0	< 0.40	< 0.15	<0.40	< 0.40	< 0.15	< 0.40
	LDUP	NA	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	NS	NS	NS	NA.	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11	<1.0	<10	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 0.40	< 0.15	< 0.40	< 0.40	< 0 15	< 0.40
	יוט וו	NS	NS	NS	NS	NS	N\$	NS	NS	NS	NS	NS	NS	NS	NS	NS	<1.0	<1.0	<10	<10	<1.0	<1.0	< 0.40	<0.15	< 0.40	NS	NS	NS
	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.4	<1.0	<1.0	NS	NS	NS	11	<1.0	<1.0	8.2	<1.0	<10	<1.0	<1.0	<1.0	0.62	< 0.15	< 0.40	< 0.40	< 0 15	< 0.40
1	III DUP	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	< 0.40	< 0 15	< 0.40
	ì																l l						1					
M-62	. [<1.0	<1.0	< 0	<1.0	<10	<1.0	10	<1.0	<1.0	7.8	14	<1.0	<1.0	<1.0	<1.0	4.3	<1.0	<10	<1.0	<10	< 1.0	8.7	<0.15	< 0.40	14	<0.15	< 0.40
ì	II I	4.9	<1.0	<1.0	4.K	< 10	<1.0	28	<10	<1.0	79	3.8	<1.0	16	<1.0	< 0	7	<1.0	<1.0	1.4	<1.0	< i.0	6.9	<0.15	< 0.40	26	<0.15	< 0.40
	יוטם וו	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	7.1	<1.0	<10	NS	NS	NS	6.5	<0.15	< 0.40	NS	NS	NS
i 1	iii.	3.7	<1.0	<1.0	3.4	<1.0	<10	15	<1.0	<1.0	40	1.9	<1.0	14	<1.0	<1.0	К.9	<10	<1.0	6.5	<1.0	<1.0	0.42	<015	< 0.40	2.3	< 0.15	< 0.40
	III DUP	NA	NA	NA	34	<10	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	N\$
M-63		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<10	<1.0	NS	NS	NS	<1.0	<1.0	<10	<10	<1.0	<1.0	<1.0	<10	<1.0	<0.40	<0.15	< 0.40	<0.40	< 0.15	<0.40
	ישטו 🕽	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<1.0	<1.0	<10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	u l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<10	NS	NS	NS	<1.0	<1.0	<0.1>	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<0.40	< 0.15	< 0.40	< 0.40	< 0.15	< 0.40
	111	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	<1.0	<10	<10	<1.0	<10	<1.0	< 1.0	< 0.40	< 0.15	< 0.40	<0.40	< 0.15	< 0 40
	III DUP	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NS	N\$	NS	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
M-64		<1.0	<1.0	<1,0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<10	< 0.40	< 0.15	<0.40	<0.40	< 0.15	< 0.40
	DUP	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA -	NS	NS	NS	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	u l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 0.40	< 0.15	< 0.40	< 0.40	< 0.15	< 0.40
	m l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 0.40	< 0,15	< 0.40	<0.40	<0.15	< 0.40
	III DUP	NA	NA	NA	NA	NA	NA	<1.0	<1.0	<10	NS	NS	NS	NA	NA	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CRITERL	,I	- 5	-			-		L						l			L.,				5	- 5	L			5		

NOTES:

- 1. All data in micrograms per liter (µg/L)
 2. Boxed data indicates an exceedance of criteria (5µg/L)
- 3. TCE: trichloroethylene
- PCE tetrachloroethylene
 NS no sample collected
- 6. <: analyte not detected above provided reporting limit
- 7. NA: not applicable 8. Only M-62 resampled in June 2002

Criteria by the Michigan Department of Environmental Quality (MDEQ), as established in an agreement between the MDEQ and the U.S. Coast Guard (USCG)

Attachment 6



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY **ENVIRONMENTAL LABORATORY**

P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Division: RRD

Report to: JOHN VANDERHOOF

MDEQ-RRD-CADILLAC

CADILLAC DISTRICT OFFICE

120 W. CHAPIN STREET, CADILLAC, MI 49601

Total: \$900.00

Lab Work Order #: 41000192

Work Site ID: 28000006

Site Name: AVENUE EAST GROUNDWA

Received: 10/21/2004

Reported: 11/05/2004

Collected By: JOHN V.

Samples Received:

No:	Sample ID	Sample Description	Matrix:	Collection Date
01	AA42665	M7-L1	WATER	10/20/2004
02	AA42666	M7-L2	WATER	10/20/2004
03	AA42667	M7-L3	WATER	10/20/2004
04	AA42668	M8-L1	WATER	10/20/2004
05	AA42669	M8-L2	WATER	10/20/2004
06	AA42670	M8-L3	WATER	10/20/2004
07	AA42671	M9-L1	WATER	10/20/2004
08	AA42672	M9-L2	WATER	10/20/2004
09	AA42673	M9-L3	WATER	10/20/2004

I certify that the analysis performed by the MDEQ Environmental Laboratory are accurate and that the laboratory tests were conducted by methods approved by the U.S. Environmental Protection Agency and other appropriate regulatory agencies.

Bob Avery, Laboratory Director



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY ENVIRONMENTAL LABORATORY

P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA42665 M7-L1

* /		_			
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7 0	14111	-	טונוט	vui	ш.э

Analytical Method	d: 8260	Date Tested:	10/24/2004	Analyst:	PCR	
CAS# C	ompound	F	Result ug/L	RL	Qualifier	Dilution Factor
SURROGATE #F	Bromofluorobenzene#	1	02			*
SURROGATE #I	Dibromofluoromethane#		8.8		and a standard	
SURROGATE #7	Γoluene-d8#	i	00			
630-20-6 1,	1,1,2-Tetrachloroethane	gradient de Propins	Not Detected	1.0	그리 보기 밤송	1.0
71-55-6 1,	1,1-Trichloroethane	1	Not Detected	1.0		1.0
79-34-5 1,	1,2,2-Tetrachloroethane	1	Not Detected	1.0		1.0
	1,2-Trichloroethane	7	Not Detected	1.0		1.0
	1-Dichloroethane	1	Not Detected	1.0		1.0
	1-Dichloroethylene	1	Not Detected	1.0		1.0
	2,3-Trichlorobenzene	j	Not Detected	5.0		1.0
	2,3-Trichloropropane		Not Detected	1.0		1.0
	2,4-Trichlorobenzène	•	Not Detected	5.0		1.0
	2,4-Trimethylbenzene	and the second of the second	Not Detected	1.0	o describina de la certa de escuerci	1.0
	2-Dibromo-3-chloropropane		Not Detected	5.0		1.0
	2-Dibromoethane	A CONTRACTOR OF THE CONTRACTOR	Not Detected	1.0 	en er amerika errena erromana errena. Er	1.0 Alianament og skalende er en eller 170
	2-Dichlorobenzene	11	Not Detected	1.0		11.0
	2-Dichloroethane		Not Detected	1.0 	1940 - Paris Views, an <i>Biol</i> ych	1.0 1.0
	2-Dichloropropane		Not Detected	1.0	end of a particular	The first term of the state of
	3,5-Trimethylbenzene 3-Dichlorobenzene	75 W	Not Detected	1.0 1 - 4 - 4 - 5 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7		1.0 1.0
	4-Dichlorobenzene		Not Detected	1.0 1.0	. 1 d (3) (1) (1) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	%& 339 995
	Butanone (MEK)		Not Detected	5.0		*io
	Hexanone	* *	Not Detected	5.0	a mark tagan mengalah salah	1.0
	Methylnaphthalene		Not Detected	5.0		1.0
	Propanone (acetone)		Not Detected	20	A 1-1 (5 80 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1.0
108-10-1 4-	Methyl-2-pentanone (MIBK)		Not Detected	5.0		1.0
	crylonitrile	1	Not Detected	5.0		1.0
71-43-2 B	enzene	1	Not Detected	1.0		1.0
	romobenzene		Not Detected	1.0		1.0
	romochloromethane		Not Detected	1.0		1.0
	romodichloromethane		Not Detected	1.0	and the first species of the first thin	1.0
	romoform		Not Detected	1.0		1.0
	romomethane		Not Detected	5.0	ing Sangka, wat at a 1961.	1.0 3442 (2.5) (2.5)
1 ** *	arbon disulfide		Not Detected	1.0		1.0
4.1	arbon tetrachloride	and the second of the second o	Not Detected	1.0 ************************************	- - 1.144.688888871111111111111111111111111111111	
	hlorobenzene	The second secon	Not Detected			
	hloroethane		Not Detected	5.0 మూడుకు మారు మహించిన	ng pagagan agamalan diba	1.0 v z sákosa soczaloka z szamsky stalic
	illoroform	•	Not Detected	1.0	SACE SEE SEE SEE SEE SEE	
	hloromethane -1,2-Dichloroethylene		Not Detected	5.0		1.0 - 1.0
	s-1,2-Dichloroeinylene s-1,3-Dichloropropylene		Not Detected	1.49.44 (2.55)	स्ता त्राह्मास्य स्थान स्ता स्थिति ।	indian de la companion de la c La companion de la companion de
10001-01-3 CIS	s-1,5-Dichioropropylene	Γ	not Detected	1.0		1.0

CAS# : Chemical Abstract Service Registry Number

RL: Reporting Limit
ND: Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)

mg/L: milligram/liter (ppm)
ug/Kg: microgram/kilogram (ppb)
mg/Kg: milligram/kilogram (ppm)

Laboratory Contacts

Inorganic Unit Mgr: Sandy Gregg
Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY ENVIRONMENTAL LABORATORY

P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA42665 M7-L1

Vol	atile	Com	ibound	ſę
v w	aunc	V.OH	www	1.7

Analytical Met	thod: 8260	Date Tested:	10/24/2004	Analys	t: PCR		
CAS#	Compound		Result ug/L	RL		Qualifier	Dilution Factor
124-48-1	Dibromochloromethane		Not Detected	1.0			1.0
74-95-3	Dibromomethane		Not Detected	1.0	٠.		1.0。 不能 医高速性 1000000000000000000000000000000000000
75-71-8	Dichlorodifluoromethane		Not Detected	5.0			1.0
60-29-7	Diethyl ether	$(G_{i,j}) = (G_{i,j} F_{i,j}) = (G_{i,j} F_{i,j} F_{i,j})$	Not Detected	5.0			
100-41-4	Ethylbenzene		Not Detected	1.0			1.0
67-72-1	Hexachloroethane		Not Detected	5.0			1.0
98-82-8	Isopropylbenzene		Not Detected	1.0			1.0
108383,106423	m & p - Xylene		Not Detected	2.0	y in the		1.0
74-88-4	Methyl iodide		Not Detected	1.0			1.0
75-09-2	Methylene chloride		Not Detected	5.0 St. 1			1.0
1634-04-4	Methyltertiarybutylether		Not Detected	1.0		Service de de	1.0
91-20-3	Naphthalene		Not Detected	5.0		X	1.0
104-51-8	n-Butylbenzene	Dec 1809 : New Yorks a serie.	Not Detected	1.0		ويها والمعارض والماسات	- 1.0 Sandan Santa Andréa de Andréa de Santa de Carta
103-65-1	n-Propylbenzene		Not Detected	1.0			A.O. Washington
95-47-6	o-Xylene	t D. Daktskich Seinsten u.	Not Detected	1.0	A. A. S.	9. 3	1.0 • \$127 24 December 1997 1991 1991 1991
99-87-6 135-98-8	p-Isopropyl toluene		Not Detected	1.0	No.		1.0
100-42-5	sec-Butylbenzene	Davidad balanci je ov	Not Detected Not Detected	1.0 0.1 ************************************	gen, Ne.	na nagatika Masilik	1.0 1. 0
98-06-6	Styrene tert-Butylbenzene	for from the declaration are for a	Not Detected	1.0			1.0
127-18-4	Tetrachloroethylene	Parcini atomora	Not Detected	1.0 1.0			10
109-99-9	Tetrahydrofuran	er Grand Marieta Australia (Sc.	Not Detected	5.0	ili ili e i e i	The State of the S	1.0
108-88-3	Toluene		Not Detected	1.0	e de la compa		10
156-60-5	trans-1,2-Dichloroethylene	116	Not Detected	1.0		and the second of the second	1.0
10061-02-6	trans-1,3-Dichloropropylene		Not Detected	1.0			1.0
110-57-6	trans-1,4-Dichloro-2-butene	98 17 7 7 15 Pr	Not Detected	5.0		1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	1.0
79-01-6	Trichloroethylene	建砂锅 医别人病毒	Not Detected	1.0	\$ 4 773	最近本建	TO THE STATE OF TH
75-69-4	Trichlorofluoromethane		Not Detected	1.0			1.0
75-01-4	Vinyl chloride		Not Detected	1.0			10

CAS# : Chemical Abstract Service Registry Number

RL: Reporting Limit
ND: Not Detected

ug/L: microgram/liter (ppb)
mg/L: milligram/liter (ppm)
ug/Kg: microgram/kilogram (ppb)
mg/Kg: milligram/kilogram (ppm)

Laboratory Contacts

Inorganic Unit Mgr: Sandy Gregg Organic Unit Mgr: Carol Smith Systems Mgmt Unit: George Krisztian



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY ENVIRONMENTAL LABORATORY

P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA42666 M7-L2

	ounds							
Analytical Met	hod: 8260	Date Tested:	10/24/2004	A	nalyst:	PCR		
CAS#	Compound		Result ug/L		RL		Qualifier	Dilution Factor
SURROGATE	#Bromofluorobenzene#		100					
SURROGATE	#Dibromofluoromethane#	7 3	98.1			· . **		
SURROGATE	#Toluene-d8#		100					and the second of the second o
630-20-6	1,1,1,2-Tetrachloroethane		Not Detected		1.0		the same and	1.0
71-55-6	1,1,1-Trichloroethane	en j	Not Detected	e in the second	1.0		2.50	1.0
79-34-5	1,1,2,2-Tetrachloroethane		Not Detected		0.1	: ' '' '		1.0
79-00-5 75-34-3	1,1,2-Trichloroethane 1,1-Dichloroethane	er en forme en	Not Detected	and the second	1.0			- 1.0 material out design in the entitle states
75-34-3 75-34-3	1,1-Dichloroethylene		Not Detected Not Detected	Part Part	1.0 1.0			. 1.0
87-61-6	1,2,3-Trichlorobenzene		Not Detected	1. 1.7 1.	5.0	4	A STATE OF THE STA	1.0
96-18-4	1,2,3-Trichloropropane		Not Detected		1.0			1.0
120-82-1	1,2,4-Trichlorobenzene		Not Detected	A 12 6 6	5.0	y	a jakabay	
95-63-6	1,2,4-Trimethylbenzene	obio i ki i si i natan'an⊒≢riki si	Not Detected		1.0	· ·	The state of the s	1.0
96-12-8	1,2-Dibromo-3-chloropropane		Not Detected		5.0			1.0
106-93-4	1,2-Dibromoethane	7 % % M	Not Detected		1.0			1.0
95-50-1	1,2-Dichlorobenzene		Not Detected		1.0			1.0
107-06-2	1,2-Dichloroethane		Not Detected	,	1.0			1.0
78-87-5	1,2-Dichloropropane		Not Detected		1.0	1, 24		1.0
108-67-8	1,3,5-Trimethylbenzene	grand the grand day	Not Detected	1 1 1	0.1		والمراجع والمراجع	T.O Programme of the contract with \$455.
541-73-1	1,3-Dichlorobenzene		Not Detected		1.0	1 1000		1.0
106-46-7 78-93-3	1,4-Dichlorobenzene	er i	Not Detected	ja en la sala e e	1.0	n ne 1	a least toy th	
7 8-93-3 591-78-6	2-Butanone (MEK) 2-Hexanone		Not Detected Not Detected	i tin esta s	5.0	4 97		1.0
91-76-0 91-5 7 -6	2-Methylnaphthalene	an all the distributions	Not Detected		5.0 5.0			1.0
67-64-1	2-Propanone (acetone)	or it and the street of the first finished	Not Detected		20			1.0
108-10-1	4-Methyl-2-pentanone (MIBK)	araj ko r iiki	Not Detected	San Tab	5.0			10
107-13-1	Acrylonitrile	A SECURE SERVICES	Not Detected	***	5.0	1404 1 1 1 1 1 1	in a section of	1.0
71-43-2	Benzene		Not Detected	lima i gariji	1.0			1.0
108-86-1	Bromobenzene		Not Detected		1.0			1.0
74-97-5	Bromochloromethane		Not Detected	twy	1.0			1.0
75-27-4	Bromodichloromethane	The second secon	Not Detected		1.0	5. •.	r tankingybat	1.0
75-25-2	Bromoform		Not Detected		1.0			1:0
74-83-9	Bromomethane		Not Detected		5.0	j. 4 j. 4	To see him white	1.0 14 (20), 53 (57) (57) (57) (57)
75-15-0	Carbon disulfide		Not Detected		1.0	4.3		1.0
56-23-5 1 08-90-7	Carbon tetrachloride Chlorobenzene		Not Detected	4 4	1.0	2	. N. 4 I Malas Deb	1.0 A lba kansiya (1.50 A.b. So.
75-00-3	Chloroethane		Not Detected Not Detected		1.0 5.0			1.0
67-66-3	Chloroform	in. History	Not Detected	te Historia	1.0			1.0 (1.0
74-87-3	Chloromethane		Not Detected	1.1	5.0	ry reservit	1 8444 (\$10)\$50	1.0
156-59-2	cis-1,2-Dichloroethylene	· 中心的 基层板	Not Detected		1.0	នៃក្នុង <u>ន</u>		1.0
10061-01-5	cis-1,3-Dichloropropylene	and the second	Not Detected		1.0	1.11		1.0

CAS# : Chemical Abstract Service Registry Number

RL: Reporting Limit
ND: Not Detected

ug / L: microgram / liter (ppb)
mg / L: milligram / liter (ppm)

ug / Kg : microgram / kilogram (ppb) mg / Kg : milligram / kilogram (ppm) Laboratory Contacts

Inorganic Unit Mgr: Sandy Gregg
Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA42666 M7-L2

Volatile Compounds

Analytical Me	ethod: 8260	Date Tested:	10/24/2004	Analyst: PCR		
CAS#	Compound		Result ug/L	RL	Qualifier	Dilution Factor
124-48-1	Dibromochloromethane		Not Detected	1.0		1.0
74-95-3	Dibromomethane		Not Detected	1.0		1.0
75-71-8	Dichlorodifluoromethane		Not Detected	5.0		1.0
60-29-7	Diethyl ether		Not Detected	5.0	ng Politika	-1.0 / / / / / / / / / / / / / / / / / / /
100-41-4	Ethylbenzene		Not Detected	1.0		1.0
67-72-1	Hexachloroethane		Not Detected	5.0		21.6年至1月1日之一次中国共產黨
98-82-8	Isopropylbenzene		Not Detected	1.0		1.0
108383,106423			Not Detected	2.0		1.0
74-88-4	Methyl iodide		Not Detected	1.0		1.0
75-09-2	Methylene chloride		Not Detected	5.0		1.00
1634-04-4	Methyltertiarybutylether		Not Detected	1.0	in the second second	1.0 24. .
91-20-3	Naphthalene		Not Detected	Acceptable of the American Control of	X	1.0
104-51-8	n-Butylbenzene		Not Detected	1.0	en gerendisker.	- 1.0 - 1.6 - 1.0 - 1.0 - 1.0 - 1.0 - 1.0 - 1.0 - 1.0 - 1.0 - 1.0 - 1.0 - 1.0 - 1.0 - 1.0 - 1.0 - 1.0 - 1.0 - 1.0 - 1
103-65-1 95-47-6	n-Propylbenzene		Not Detected	1.0		1.0
93-47-6 99-87-6	o-Xylene p-Isopropyl toluene	and the second	Not Detected	1.0 -1.55	Signal State	1.0
135-98-8	sec-Butylbenzene		Not Detected Not Detected	1.0 1.0	and the second of the second	
100-42-5	Styrene		Not Detected	1.0		1.0
98-06-6	tert-Butylbenzene		Not Detected	1.0	Social Medicality	 4.44 color of the same as always as a section 1.0
127-18-4	Tetrachloroethylene		5.5	1.0	1000 A	1.0
109-99-9	Tetrahydrofuran		Not Detected	5.0	5 - \$560 miles 20 + 6	1.0
108-88-3	Toluene		Not Detected	1.0		1.0
156-60-5	trans-1,2-Dichloroethylene		Not Detected	1.0		1.0
10061-02-6	trans-1,3-Dichloropropylene		Not Detected	1.0	Billy Carry	110多元的高行为公司等
110-57-6	trans-1,4-Dichloro-2-butene		Not Detected	5.0		1.0
79-01-6	Trichloroethylene		Not Detected	1.02		1.0
75-69-4	Trichlorofluoromethane		Not Detected	1.0		1.0
75-01-4	Vinyl chloride		Not Detected	1.0		1.0

CAS# : Chemical Abstract Service Registry Number

RL: Reporting Limit ND: Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)

ug / Kg : microgram / kilogram (ppb) mg / Kg : milligram / kilogram (ppm) Laboratory Contacts



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA42667 M7-L3

olatile Compounds			
Analytical Method: 8260	Date Tested: 10/24/2004	Analyst: PCR	
AS# Compound	Result ug/L	RL Qu	alifier Dilution Factor
JRROGATE #Bromofluorobenzene#	101		
JRROGATE #Dibromofluoromethane#	97.6		
JRROGATE #Toluene-d8#	98.7		
0-20-6 1,1,1,2-Tetrachloroethane	Not Detected	1.0	e de 1.0 de la decembra de 1.0 de 1
-55-6 1,1,1-Trichloroethane	Not Detected	1.0	1.0
-34-5 1,1,2,2-Tetrachloroethane	Not Detected		
-00-5 1,1,2-Trichloroethane -34-3 1,1-Dichloroethane	Not Detected	1.0	1.0
-34-3 1,1-Dichloroethane -34-3 1,1-Dichloroethylene	Not Detected Not Detected	1.0	유경화 하고 1.0 변형 스포트 (1.4 시간 1.0 1.0
-61-6 1,2,3-Trichlorobenzene	Not Detected	1.0 NAME	1.0
-18-4 1,2,3-Trichloropropane	Not Detected	1.0	1.0
0-82-1 1,2,4-Trichlorobenzene	Not Detected	5.0	1.0
-63-6 1,2,4-Trimethylbenzene	Not Detected	1.0	1.0
-12-8 1,2-Dibromo-3-chloropropane		5.0	
6-93-4 1,2-Dibromoethane	Not Detected	1.0	1.0
-50-1 1;2-Dichlorobenzene	Not Detected	1.0	[10] (4.0) (4.0) (4.1) (4.2)
7-06-2 1,2-Dichloroethane	Not Detected	1.0	1.0
-87-5 1,2-Dichloropropane	Not Detected	1.0	1.0
8-67-8 1,3,5-Trimethylbenzene	Not Detected	1.0	1.0
1-73-1 1,3-Dichlorobenzene	Not Detected	1.0	1.0
6-46-7 I,4-Dichlorobenzene	Not Detected	1.0 - C 18 No to a Ses 2010 M (See Front 1997)	1.0
-93-3 2-Butanone (MEK)	Not Detected	5.0	1.0
1-78-6 2-Hexanone -57-6 2-Methylnaphthalene	Not Detected Not Detected	5.0 X	1.0 1. 0
-64-1 2-Propanone (acetone)	Not Detected		1.0
8-10-1 4-Methyl-2-pentanone (MIBK)		5.0	1.0
7-13-1 Acrylonitrile	Not Detected	5.0	1.0
-43-2 Benzene	Not Defected	1.0	1.0
8-86-1 Bromobenzene	Not Detected	1.0	1.0
-97-5 Bromochloromethane	Not Detected	1.0	是一门。在160分钟的特别的影響
-27-4 Bromodichloromethane	Not Detected	1.0	1.0
-25-2 Bromoform	Not Detected	1.0	
-83-9 Bromomethane	Not Detected	5.0	1.0
-15-0 Carbon disulfide	Not Detected	1.0	
-23-5 Carbon tetrachloride	Not Detected	1.0 2.5 (5) - 30 (4) (12) (5) (5)	1.0
8-90-7 Chlorobenzene	Not Detected	1.0	1.0 (1.0)
-00-3 Chloroethane -66-3 Chloroform	Not Detected	5.0	1.0 abones allera (1.11)
-66-3 Chloroform -87-3 Chloromethane	Not Detected Not Detected	1.0	*
6-59-2 cis-1;2-Dichloroethylene	Not Detected Not Detected	5.0	1.0
061-01-5 cis-1,3-Dichloropropylene	Not Detected	1.0	ng nga sa isab ahatan kanan ang ang ang ang 1.0

ug / L : microgram / liter (ppb)

mg/L: milligram/liter (ppm)

ug / Kg : microgram / kilogram (ppb)

mg / Kg : milligram / kilogram (ppm)

RL: Reporting Limit

ND: Not Detected

CAS# : Chemical Abstract Service Registry Number

Laboratory Contacts

Inorganic Unit Mgr: Sandy Gregg

Organic Unit Mgr: Carol Smith

Systems Mgmt Unit: George Krisztian



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number:

AA42667

M7-L3

Volatile Compounds

Analytical Met	thod: 8260	Date Tested:	10/24/2004	Analyst:	PCR	·
CAS#	Compound		Result ug/L	RL	Qualisier	Dilution Factor
124-48-1	Dibromochloromethane		Not Detected	1.0		1.0
74-95-3	Dibromomethane		Not Detected	1.0		1.0
75-71-8	Dichlorodifluoromethane		Not Detected	5.0		1.0
60-29-7	Diethyl ether		Not Detected	5.0	医淋漓性神经	1.0
100-41-4	Ethylbenzene		Not Detected	1.0		1.0
67-72-1	Hexachloroethane		Not Detected	5.0		1,0
98-82-8	Isopropylbenzene		Not Detected	1.0		1.0
108383,106423	m & p - Xylene		Not Detected	2.0		1.0
74-88-4	Methyl iodide		Not Detected	1.0	nowanie was ar misjon o okazole.	1.0
75-09-2	Methylene chloride		Not Detected	5.0		
1634-04-4	Methyltertiarybutylether	and the Mark Carlo	Not Detected	1.0	n sandro-Para i i i medica i	1.0
91-20-3	Naphthalene	ા કે કે કે જાઉલાઈ	Not Detected	√	AND	
104-51-8 103-65-1	n-Butylbenzene n-Propylbenzene	e e e e e e e e e e e e e e e e e e e	Not Detected	1.0	EN ORALWAN ORALI SUKU	- 1.0 (14)案(-115) (23)等(-125) 字第(-13)(-13)
95-47-6	o-Xylene		Not Detected Not Detected	1,0 1.0	र्गसन्दर्भ अस्त्रिक्ता स्व , ५,५००	. 1:0
99-87-6	p-Isopropyl toluene		Not Detected	the second secon	GAMMANAN AND STELL	1.0
135-98-8	sec-Butylbenzene	er de la companya de	Not Detected	1.0	전선·경우·경우·경우·경우·경우·경우·경우·경우·경우·경우·경우·경우·경우·	1.0
100-42-5	- Styrene	All fair of the Market	Not Detected	1.0		1.0
98-06-6	tert-Butylbenzene		Not Detected	1.0	製作。 建聚合 智 指導 (1) 整 (1) 東京學 (1) (1) (1)	1.0
127-18-4	Tetrachloroethylene	Angaratan	6.6			10 7 13747477
109-99-9	Tetrahydrofuran	tin promise to the contract of	Not Detected	5.0	og and publishing and place a header of piller constitution	1.0
108-88-3	Toluene	kaj segera (j. <mark>up</mark>	Not Detected	1.0		1.0
156-60-5	trans-1,2-Dichloroethylene		Not Detected	1.0	The state of the second se	1.0
10061-02-6	trans-1,3-Dichloropropylene		Not Detected	1.0	图图的 电影的	1.0
110-57-6	trans-1,4-Dichloro-2-butene		Not Detected	5.0		1.0
79-01-6	Trichloroethylene		Not Detected	1.0	建设设计量类计量的企	10
75-69-4	Trichlorofluoromethane		Not Detected	1.0		1.0
75-01-4	Vinyl chloride		Not Detected	1.0		10

CAS# : Chemical Abstract Service Registry Number

RL: Reporting Limit
ND: Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)

mg/L: milligram/liter (ppm)
ug/Kg: microgram/kilogram (ppb)
mg/Kg: milligram/kilogram (ppm)

Laboratory Contacts



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA42668 M8-L1

Analytical Met	hod: 8260	Date Tested:	10/24/2004	Analyst:	PCR	
CAS#	Compound		Result ug/L	RL	Qualifier	Dilution Factor
SURROGATE	#Bromofluorobenzene#		102			
SURROGATE	#Dibromofluoromethane#		101	•	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	化乳管管理学院 化铁石油 电电流
SURROGATE	#Toluene-d8#		100			·
630-20-6	1,1,1,2-Tetrachloroethane		Not Detected	1.0		1.0
71-55-6	1,1,1-Trichloroethane		Not Detected	0.1		1.0
79-34-5	1,1,2,2-Tetrachloroethane	ia di	Not Detected	1.0	Large Market	*1.0°374 (2.8°44)
79-00-5	1,1,2-Trichloroethane		Not Detected	1.0		1.0
75-34-3	1,1-Dichloroethane		Not Detected	1.0		1,0
75-34-3	1,1-Dichloroethylene		Not Detected	1.0		1.0
87-61-6	1,2,3-Trichlorobenzene		Not Detected	5.0 (10
96-18-4	1,2,3-Trichloropropane		Not Detected	1.0		1.0
120-82-1	1,2,4-Trichlorobenzene		Not Detected	5.0		1.0
95-63-6	1,2,4-Trimethylbenzene		Not Detected	1.0		1.0
96-12-8	1,2-Dibromo-3-chloropropane		Not Detected	5.0	计。自己会多数的数据	於10年於於今年日日本的主義
106-93-4	1,2-Dibromoethane		Not Detected	1.0		1.0
95-50-1	1,2-Dichlorobenzene	Weight By	Not Detected	1.0	· Land And Land Land	W10
107-06-2	1,2-Dichloroethane		Not Detected	1.0	and the second s	1.0
78-87-5	1,2-Dichloropropane		Not Detected	1.0		10
108-67-8	1,3,5-Trimethylbenzene		Not Detected	1.0	and the same of the control of	1.0
541-73-1	1,3-Dichlorobenzene		Not Detected	1.0		1,0
106-46-7	1,4-Dichlorobenzene		Not Detected	1.0	er er er en en er	1.0
78-93-3	2-Butanone (MEK)	Service Service Service	Not Detected	5.0		1.0
591-78-6	2-Hexanone		Not Detected	5.0	and a month end of activities	1.0
91-57-6	2-Methylnaphthalene		Not Detected	5.0	X	
67-64-1	2-Propanone (acetone)		Not Detected	20	o legal and provide the constraints	1.0
108-10-1	4-Methyl-2-pentanone (MIBK)		Not Detected	5.0		-1.0
107-13-1 71-43-2	Acrylonitrile	71 -	Not Detected	5.0	erra e kontro destina e	1.0
108-86-1	Benzene Bromobenzene	÷ .	Not Detected Not Detected	1. 0 1.0		1.0
74-97-5	Bromochloromethane	e together was the	Not Detected	1.0	1975 - 078584944.0	1.0 1.0
75-27-4	Bromodichloromethane		Not Detected	1.0		1.0
75-25-2	Bromoform		Not Detected	1.0		A LO COMPANA DE LA COMPANA
74-83-9	Bromomethane		Not Detected	5.0		1.0
75-15-0	Carbon disulfide		Not Detected	1.0		
56-23-5	Carbon tetrachloride		Not Detected	1.0	an de Salanda de Carlos de Maria. Como de Salanda de Carlos de C	1.0
108-90-7	Chlorobenzene		Not Detected	์ ได้สาราช ซึ่งไร้จัง 1.0		10
75-00-3	Chloroethane	*	Not Detected	5.0	The Third Control	1.0
67-66-3	Chloroform	kiji Terrijeta	Not Detected	1.0	. Br. Her william	\$1.0 A.A. Sala
74-87-3	Chloromethane	Commence of the second	Not Detected	5.0		1.0
156-59-2	cis-1,2-Dichloroethylene	a m	Not Detected	1.0		10
10061-01-5	cis-1,3-Dichloropropylene	•	Not Detected	1.0		1.0

CAS# : Chemical Abstract Service Registry Number

RL: Reporting Limit
ND: Not Detected

ug / L : microgram / liter (ppb)

mg/L: milligram/liter (ppm)
ug/Kg: microgram/kilogram (ppb)
mg/Kg: milligram/kilogram (ppm)

Laboratory Contacts



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA42668 M8-L1

Analytical Met	hod: 8260	Date Tested:	10/24/2004	Analy	st: PCR		
CAS#	Compound		Result ug/L	R	L	Qualifier	Dilution Factor
124-48-1	Dibromochloromethane		Not Detected	1.	0		1.0
74-95-3	Dibromomethane		Not Detected	1.	0	ta ji ha	.1.0
75-71-8	Dichlorodifluoromethane		Not Detected	5.			1.0
60-29-7	Diethyl ether		Not Detected	1. 1. 1. 1. 1. 1. 1. 5.	0		1.0
100-41-4	Ethylbenzene		Not Detected	1.	-		1.0
67-72-1	Hexachloroethane		Not Detected	∰. 19 o ka 5 .			10
98-82-8	Isopropylbenzene	manufacture of the control of the Arm	Not Detected	1.		and the second of the second	1.0
	m & p - Xylene	ng pagang pa	Not Detected		0		10 - 11 11 11 11 11
74-88-4	Methyl iodide	and the second of the second o	Not Detected	1.		n der Lateria ver	- 1.0 Name (1.0 st. 10 st
75-09-2	Methylene chloride		Not Detected	5.			1:0
1634-04-4	Methyltertiarybutylether	ing diagram, in the constraint of the constraint	Not Detected	1.	44	Taron kombanen	- 1.0 NTM: THE TIME FOR SUPERIOR AND
91-20-3 104-51-8	Naphthalene		Not Detected Not Detected	‼r e _k ever 1 ∮ 5 ,		X	10
	n-Butylbenzene n-Propylbenzene	Mala kalagajin sajamatik	Not Detected	1. 1. (1885) 1.		rii Natawa	1.0 1.0
95-47-6	o-Xylene	10、 14 x 3、 10 10 10 10 10 11 11 11 11 11 11 11 11	Not Detected	1.		ंद्रमार्गका, त्रिमें दुर्मी की	्र । (८) - । ()
the state of the s	p-Isopropyl toluene		Not Detected		o 0,445 4.	(io
135-98-8	sec-Butylbenzene	ings i metalo ki ikusikiki sebagai bilan metak ki T	Not Detected			is in Missing DAS (SAME)	1.0
and the second second second	Styrene		Not Detected	wate bot $\hat{\mathbf{i}}$			1.0
98-06-6	tert-Butylbenzene		Not Detected	1.			1.0
127-18-4	Tetrachloroethylene	金沙斯 医特里氏病	Not Detected	1.	0		1.0
109-99-9	Tetrahydrofuran		Not Detected	5.	0		1.0
108-88-3	Toluene		Not Detected	(20), 20) (1)	0	中国民族	105
156-60-5	trans-1,2-Dichloroethylene	•	Not Detected	1.	0		1.0
10061-02-6	trans-1,3-Dichloropropyle	ne a salah di	Not Detected	1.	0,		1.0
	trans-1,4-Dichloro-2-buter	and the contract of the contra	Not Detected	5.			1.0
	Trichloroethylene	的知识是是是是	Not Detected	[a,b] and $[a,b]$	0		1.0
75-69-4	Trichlorofluoromethane	and the second state of the second	Not Detected	1.	•	Land Stranger Section	1.0
75-01-4	Vinyl chloride	只是"我识别"的"说家 <u>"</u> 的	Not Detected	**************** 1.	0 (3 × 3), (3)	一位,特勒克斯	HOW A SHARE THE STATE OF THE

CAS#: Chemical Abstract Service Registry Number

RL: Reporting Limit
ND: Not Detected

ug/L: microgram/liter (ppb) mg/L: milligram/liter (ppm)

ug / Kg : microgram / kilogram (ppb) mg / Kg : milligram / kilogram (ppm) Laboratory Contacts



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA42669 M8-L2

Vol	latile	Com	pounds

Analytical Met	hod: 8260	Date Tested:	10/24/2004	Analyst: P	PCR	
CAS#	Compound		Result ug/L	RL	Qualifier	Dilution Factor
SURROGATE	#Bromofluorobenzene#		101			
SURROGATE	#Dibromofluoromethane#		99.0	. *	The page 1 M	
SURROGATE	#Toluene-d8#		101			And the second s
630-20-6	1,1,1,2-Tetrachloroethane		Not Detected	1.0		71.0
71-55-6	1,1,1-Trichloroethane		Not Detected	1.0		1.0
79-34-5	1,1,2,2-Tetrachloroethane		Not Detected	1.0		1.0
79-00 - 5	1,1,2-Trichloroethane		Not Detected	1.0	ong is get to	1.0 http://description.org/10.1001/1992/2549.
75-34-3	1,1-Dichloroethane	2.6	Not Detected	1.0	朝建于台湾州部建筑。201	1:0
75-34-3	1,1-Dichloroethylene		Not Detected	1.0	en de la companya de	1.0 1.0
87-61-6 96-18-4	1,2,3-Trichlorobenzene		Not Detected	5.0	기 가 설계가 살	
120-82-1	1,2,4-Trichlorobenzene	and the second second	Not Detected Not Detected	1.0 5. 0	North Call (1997) &	1.0 1.0
95-63-6	1,2,4-Trimethylbenzene		Not Detected	1.0	일 제 최고 - 의로왕왕의 연변화. -	ल्ड . भू र विकास चारण कार काल्याक विकास - 1.0
96-12-8	1,2-Dibromo-3-chloropropane		Not Detected	5.0		10
106-93-4	1,2-Dibromoethane	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Not Detected	1.0	i dita i ing pinakan mengangan salah s Salah salah sa	1.0
95-50-1	1,2-Dichlorobenzene		Not Detected	1.0		1.0
107-06-2	1,2-Dichloroethane		Not Detected	1.0		1.0
78-87-5	1,2-Dichloropropane		Not Detected	1.0		1.0
108-67-8	1,3,5-Trimethylbenzene	and the second second second	Not Detected	1.0		1.0
541-73-1	1,3-Dichlorobenzene		Not Detected	1.0		1.0
106-46-7	1,4-Dichlorobenzene		Not Detected	1.0	and the second of the second	1.0
78-93-3	2-Butanone (MEK)	The second second	Not Detected	5.0		1.0
591-78-6	2-Hexanone	The state of the second section and the second	Not Detected	5.0	a on la ga an is noong Mas	- 1.0 1.4586, 45 AN ARAS TIG SERVIC
91-57-6 67-64-1	2-Methylnaphthalene 2-Propanone (acetone)		Not Detected Not Detected	5.0 20		1.0 1.0
108-10-1	4-Methyl-2-pentanone (MIBK)		Not Detected	5.0		1.0
107-13-1	Acrylonitrile		Not Detected	5.0	न्य । १ कि.स.च. १ कि.स.च्या स्थानस्थान	1.0
71-43-2	Benzene		Not Detected	1.0		10
108-86-1	Bromobenzene		Not Detected	1.0		1.0
74-97-5	Bromochloromethane		Not Detected	1.0	"自己的"中央的	1.0
75-27-4	Bromodichloromethane		Not Detected	1.0		1.0
75-25-2	Bromoform	W	Not Detected	1.0		1.0
74-83-9	Bromomethane		Not Detected	5.0	ere er ere	1.0
75-15-0	Carbon disulfide		Not Detected	1.0		40
56-23-5	Carbon tetrachloride	and the second s	Not Detected	1.0	ografija i Samara (18	
108-90-7 75-00-3	Chlorobenzene Chloroethane		Not Detected	1.0		10
73-00-3 67-66-3	Chloroform		Not Detected Not Detected	5.0 1. 0	දී මට දෙනු නැමුණු එල්ල්.	1.0 1.0
74-87-3	Chloromethane	the state of the s	Not Detected	5.0	্লিক ক্ষুত্ৰ প্ৰতিষ্ঠানিক প্ৰতিষ্ঠা বিষয়ে ক্ষুত্ৰ	1.0
156-59-2	cis-1,2-Dichloroethylene		Not Detected	1.0		
10061-01-5	cis-1,3-Dichloropropylene		Not Detected	1.0		1.0
		· · · · · · · · · · · · · · · · · · ·				

CAS# : Chemical Abstract Service Registry Number

RL: Reporting Limit
ND: Not Detected

ug / L: microgram / liter (ppb)
mg / L: milligram / liter (ppm)

mg/L: milhgram/liter (ppm)
ug/Kg: microgram/kilogram (ppb)
mg/Kg: milligram/kilogram (ppm)

Laboratory Contacts



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number:

AA42669

M8-L2

Volatile Compounds

Analytical Met	hod: 8260	Date Tested:	10/24/2004	Analyst	: PCR	
CAS#	Compound		Result ug/L	RL	Qualifie	r Dilution Factor
124-48-1	Dibromochloromethane		Not Detected	1.0		1.0
74-95-3	Dibromomethane	网络阿拉克斯克	Not Detected	1.0		マンチ 1:0 人を選出される。
75-71-8	Dichlorodifluoromethane		Not Detected	5.0		1.0
60-29-7	Diethyl ether		Not Detected	5.0		
100-41-4	Ethylbenzene		Not Detected	1.0		1.0
67-72-1	Hexachloroethane		Not Detected	5.0		是 1.0 章 · · · · · · · · · · · · · · · · · ·
98-82-8	Isopropylbenzene	The second second	Not Detected	0.1		1.0
108383,106423	m & p - Xylene	· 自己的 第三世紀第	Not Detected	2.0		[4] [4] 1.00 音鸣、音·多)
74-88-4	Methyl iodide	and the second second second	Not Detected	1.0		1.0
75-09-2	Methylene chloride		Not Detected	5.0		1.0
1634-04-4 91-20-3	Methyltertiarybutylether	Durah uni erasay a yarasastatin sara	Not Detected	1.0	en e	1.0 S. Timber krasika salika kalèn 49760 (J. S. S. S. S. S. S. S.
104-51-8	Naphthalene		Not Detected	5.0	$M^{0}(\mathbb{R}^{n}) \cap \mathbf{X}_{0}(y_{0}, \mathbb{R}^{n})$	1.0
103-65-1	n-Butylbenzene n-Propylbenzene	mas	Not Detected	1.0	gravetskini tysket jaar	1.0 Articonomic (1888) (1888) (1888) (1888) (1888) (1888)
95-47-6	o-Xylene		Not Detected	1.0 1.0	mparakan manaka	(1) (4) (1.44年) (2.22年) (2.224年) (2.22年) (2.22年) (2.224年) (2.224244) (2.224244) (2.2242444) (2.224244) (2.2242444) (2.2242444) (2.22424444) (2.2242444444444
99-87-6	p-Isopropyl toluene		Not Detected	1.0		1.0
135-98-8	sec-Butylbenzene	and the first of the control of the state of	Not Detected	1.0	Services of the secondary	1.0
100-42-5	Styrene	SAMERIA	Not Detected	1.0	The Land	
98-06-6	tert-Butylbenzene	。 10 · 6 · 6 · 6 · 6 · 6 · 6 · 6 · 6 · 6 ·	Not Detected	1.0	. ***	1.0
127-18-4	Tetrachloroethylene	CHARLEST WARM	Not Detected	1.0		1.0
109-99-9	Tetrahydrofuran		Not Detected	5.0		1.0
108-88-3	Toluene	。1962年第二年	Not Detected	1.0	自己种种种的	5 (1.0)
156-60-5	trans-1,2-Dichloroethylene		Not Detected	1.0		1.0
10061-02-6	trans-1,3-Dichloropropylene	自在智能學學學	Not Detected	1.0	4.3异常的	10
110-57-6	trans-1,4-Dichloro-2-butene		Not Detected	5.0		1.0
79-01-6	Trichloroethylene		2.5	1.0		31.10 PER
75-69-4	Trichlorofluoromethane	the state of the s	Not Detected	1.0		1.0
75-01-4	Vinyl chloride		Not Detected	1.0		1.0

CAS# : Chemical Abstract Service Registry Number

RL: Reporting Limit
ND: Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number:

AA42670

M8-L3

Volatile	Compounds
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Analytical Met	hod: 8260	Date Tested:	10/24/2004	Analyst:	PCR	
CAS#	Compound		Result ug/L	RL	Qualifier	Dilution Factor
SURROGATE	#Bromofluorobenzene#		100			
SURROGATE	#Dibromofluoromethane#		98.9			
SURROGATE	#Toluene-d8#		102			
630-20-6	1,1,1,2-Tetrachloroethane		Not Detected	1.0		1.0
71-55-6	1,1,1-Trichloroethane		Not Detected	1.0		1.0
79-34-5	1,1,2,2-Tetrachloroethane		Not Detected	1.0		1.0
79-00-5	1,1,2-Trichloroethane		Not Detected	1.0		1.0
75-34-3	1,1-Dichloroethane		Not Detected	1.0		1.0
75-34-3	1,1-Dichloroethylene		Not Detected	1.0		1.0
87-61-6	1,2,3-Trichlorobenzene		Not Detected	the state of the s	in a set date in	1.0
96-18-4	1,2,3-Trichloropropane	The state of the s	Not Detected	1.0	and the second second	1.0
120-82-1	1,2,4-Trichlorobenzene		Not Detected			1.0
95-63-6	1,2,4-Trimethylbenzene	e angles y to the anti-term of performance (A.S. 1980) (New York)	Not Detected	1.0	The second of the second second second	
96-12-8	1,2-Dibromo-3-chloroprop	pane - The second	Not Detected	5.0		1.0
106-93-4	1,2-Dibromoethane	on the company of the specific control of the contr	Not Detected		on the table of a stock and	- 1.0 24.60 a 19.5 a 24. One 19.60 a 14.60 a 6
95-50-1	1,2-Dichlorobenzene		Not Detected	1.0		1.0
107-06-2 78-87-5	1,2-Dichloroethane	· [4] [4] [4] [2] [4] [4] [4] [4] [4] [4] [4] [4] [4] [4	Not Detected	1.0 Tanada wa 21 a 31 a 4	and the second property	1.0 ************************************
	1,2-Dichloropropane		Not Detected		ja fegja filosofi (j. 1946-kara - 1946) P	10
108-67-8 5 41-73- 1	1,3,5-Trimethylbenzene 1,3-Dichlorobenzene	The second secon	Not Detected	1.0 1.0	A. M. C. Server Sp. 1945	1.0 1.0
106-46-7	1,4-Dichlorobenzene		Not Detected Not Detected		아랑 그리산원칙주	1 01.40.1
78-93-3	2-Butanone (MEK)	es an Demark Washingt	Not Detected	1.0 5.0	Jetanie i jednije krigovstj	1.0 1.0
591-78-6	2-Hexanone	역 (현대 전 - 1995년 1일 전 1일	Not Detected	5.0	fige of the first of the figure at	-1.0
91-57-6	2-Methylnaphthalene		Not Detected	5.0		1.0
67-64-1	2-Propanone (acetone)	· · · · · · · · · · · · · · · · · · ·	Not Detected	20		1.0
108-10-1	4-Methyl-2-pentanone (M	IBK)	Not Detected	5.0	· · · · · · · · · · · · · · · · · · ·	10
107-13-1	Acrylonitrile		Not Detected	5.0		1.0
71-43-2	Benzene	的一种 的复数电影	Not Detected	1.0		1.0
108-86-1	Bromobenzene		Not Detected	1.0		1.0
74-97-5	Bromochloromethane		Not Detected	1.0	그는 그는 보다를 함빛할	1.0
75-27-4	Bromodichloromethane		Not Detected	1.0		1.0
75-25-2	Bromoform		Not Detected	1.0	· 电电阻 1000 1000 克斯基	10
74-83-9	Bromomethane	والمواور والمساور والمساور والمساور والمساور	Not Detected	5.0		1.0
75-15-0	Carbon disulfide	或於於馬德國聯繫。	Not Detected	1.0		10
56-23-5	Carbon tetrachloride	erik i transki i kome de radio e	Not Detected	1.0		1.0
108-90-7	Chlorobenzene		Not Detected	1.0		1.0
75-00-3	Chloroethane	ing sames, you in the case of the same	Not Detected	5.0	on one of the second of the second	1.0 35. Alexandra (2007) (2007) (2007) (2007)
67-66-3	Chloroform		Not Detected			1.0
74-87-3	Chloromethane	ing a series of the green and the	Not Detected	5.0	ing the constants	1.0
156-59-2	cis-1,2-Dichloroethylene		1.2	1.0		10 14 9 14 18 1
10061-01-5	cis-1,3-Dichloropropylene		Not Detected	1.0		1.0

ug / L : microgram / liter (ppb)

mg / L: milligram / liter (ppm)

ug / Kg : microgram / kilogram (ppb)

mg / Kg : milligram / kilogram (ppm)

RL: Reporting Limit

ND: Not Detected

CAS# : Chemical Abstract Service Registry Number

Laboratory Contacts

Inorganic Unit Mgr: Sandy Gregg

Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA42670 M8-L3

volutile Com	pounus					
Analytical Me	thod: 8260	Date Tested:	10/24/2004	Analyst: PCR		
CAS#	Compound		Result ug/L	RL	Qualifier	Dilution Factor
124-48-1	Dibromochloromethane		Not Detected	1.0		1.0
74-95-3	Dibromomethane		Not Detected	1.0		1.0
75-71-8	Dichlorodifluoromethane		Not Detected	5.0		1.0
60-29-7	Diethyl ether		Not Detected	5.0		1.0
100-41-4	Ethylbenzene		Not Detected	1.0		1.0
67-72-1	Hexachloroethane		Not Detected	5.0		1.0
98-82-8	Isopropylbenzene	No. 2 Company	Not Detected	1.0		1.0
108383,106423	m & p - Xylene	[[] []、中国内操	Not Detected	2.0	ા કે માત્ર ફ્રમ્યું વિદ	1.0
74-88-4	Methyl iodide	n i ki niya wasana ara	Not Detected	0.1		- 1.0 - 1.2 (1.5 million and 1.7 million (1.5 million (1.7 million))
75-09-2	Methylene chloride		Not Detected	5.0	e fight	1.0
1634-04-4	Methyltertiarybutylether	. Bunda St. St. Centra	Not Detected	1.0	we for the section of	
91-20-3 104-51-8	Naphthalene n-Butylbenzene		Not Detected Not Detected	5.0 (\$ 5.0 (\$ 5.0 cm)	X (1.17) 1.49	1.0
103-65-1	n-Propylbenzene	eneral He rmark	Not Detected	1.0 1.0	- 20 J# 108	
95-47-6	o-Xylene		Not Detected	1.0		
99-87-6	p-Isopropyl toluene		Not Detected	1.0	to the second second	1:0
135-98-8	sec-Butylbenzene	ing no parkat hada Nobel	Not Detected	1.0	rights of the Advantage	1.0
100-42-5	Styrene	di establica	Not Detected	1.0		10
98-06-6	tert-Butylbenzene	The state of the s	Not Detected	1.0	. 124	1.0
127-18-4	Tetrachloroethylene		Not Detected	1.0		11.0 4 3 A A S A S A S A S A S A S A S A S A S
109-99-9	Tetrahydrofuran		Not Detected	5.0	, , , , ,	1.0
108-88-3	Toluene		Not Detected	1.0		1.0
156-60-5	trans-1,2-Dichloroethylene		Not Detected	1.0		1.0
10061-02-6	trans-1,3-Dichloropropylene		Not Detected	1.0		1.0
110-57-6	trans-1,4-Dichloro-2-butene	and the second second	Not Detected	5.0		1.0
79-01-6	Trichloroethylene	自然的情况。	6.6	1.0		V1.0
75-69-4	Trichlorofluoromethane	ing to the second	Not Detected	1.0	مايعة إجابع يبره	1.0 #202 - AVVIANT DADAGA AMERIKAN A
75-01-4	Vinyl chloride		Not Detected	1.0 gr 1.0 gr gr gr		1.0

CAS# : Chemical Abstract Service Registry Number

RL: Reporting Limit
ND: Not Detected

ug / L : microgram / liter (ppb) mg / L: milligram / liter (ppm) ug / Kg : microgram / kilogram (ppb) mg / Kg : milligram / kilogram (ppm) Laboratory Contacts



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA42671 M9-L1

Vol	latile	Com	pounds
7 (7)	44111		DVUHUS

Analytical Me	thod: 8260	Date Tested:	10/24/2004	Analyst: PCR		
CAS#	Compound		Result ug/L	RL	Qualifier	Dilution Factor
SURROGATE	#Bromofluorobenzene#		101			
SURROGATE	#Dibromofluoromethane#		98.6		Mr. 111	
SURROGATE	#Toluene-d8#		100			tion the source of the source
630-20-6	1,1,1,2-Tetrachloroethane		Not Detected	1.0	estanti, niegoje	1.0
71-55-6	1,1,1-Trichloroethane		Not Detected	1.0		1.0
79-34-5	1,1,2,2-Tetrachloroethane		Not Detected	1.0	महित्रक्रिकेता हित्र	1.0
79-00-5	1,1,2-Trichloroethane	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	Not Detected	1.0	naturi e e e e e e e e e e e e e e e e e e e	
75-34-3	1,1-Dichloroethane		Not Detected	1.0 (1.0)	viiti pii ilia,) i da	1.0
75-34-3 87-61-6	1,1-Dichloroethylene 1,2,3-Trichlorobenzene	and the street	Not Detected Not Detected	1.0 25.0	na aki at katif	1.0 1.0
96-18-4	1,2,3-Trichloropropane		Not Detected	1.0	ia de estado	ା 1.0% କ୍ଲାଲମ୍ବର ଅନୁକ୍ରଣ ବ୍ୟକ୍ତ କଥିଲି । - 1.0
120-82-1	1,2,4-Trichlorobenzene	18 1000	Not Detected	5,0		1.0
95-63-6	1,2,4-Trimethylbenzene	and the Charles May	Not Detected	1.0	and the state of	1.0
96-12-8	1,2-Dibromo-3-chloropropane	1. 4. 44. 9965	Not Detected	5.0	egy property and the	1,0
106-93-4	1,2-Dibromoethane		Not Detected	1.0	on the second second second	1.0
95-50-1	1,2-Dichlorobenzene	计分子 法规定	Not Detected	1.0		1.0
107-06-2	1,2-Dichloroethane		Not Detected	1.0		1.0
78-87-5	1,2-Dichloropropane		Not Detected	1.0		1.0
108-67-8	1,3,5-Trimethylbenzene		Not Detected	1.0		1.0
541-73-1	1,3-Dichlorobenzene		Not Detected	1.0		1.0
106-46-7	1,4-Dichlorobenzene		Not Detected	1.0	. The section is not	1.0
78-93-3	2-Butanone (MEK)		Not Detected	5.0		10
591-78-6	2-Hexanone	to propriate 4,50 people	Not Detected	5.0	en Maria de la composición de la compo La composición de la	1.0 x1242x14x43.0x44xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
91-57-6	2-Methylnaphthalene	and the state of the state of	Not Detected	the second residence of the second	X	10
67-64-1 108-10-1	2-Propanone (acetone) 4-Methyl-2-pentanone (MIBK)	- 1. 1. 1.3 We 24/74	Not Detected Not Detected	20		1.0 1.0
107-13-1	Acrylonitrile		Not Detected	5.0	東京 マステージャンド	1.0
71-43-2	Benzene		Not Detected	1.0	gyr i Sorij (K. girk)	10
108-86-1	Bromobenzene		Not Detected	1.0	The second of the second	1.0
74-97-5	Bromochloromethane		Not Detected	1.0	机等水点 授礼	1.0
75-27-4	Bromodichloromethane		Not Detected	1.0		1.0
75-25-2	Bromoform		Not Detected	1.0		1.0 70 月 日本
74-83-9	Bromomethane		Not Detected	5.0		1.0
75-15-0	Carbon disulfide		Not Detected	1.0		(1.0 年) 注:" (1.2)
56-23-5	Carbon tetrachloride	and the second second	Not Detected	1.0		1.0
108-90-7	Chlorobenzene		Not Detected	美毛 崇 1:0 (1:6)		为1.0至一点上,是专业和企业合金。
75-00-3	Chloroethane		Not Detected	5.0	o santana di sa	1.0
67-66-3	Chloroform		Not Detected	هرهار و (1.0 مار ۱۵ هـ هـ هـ مــــــــــــــــــــــــــــ		10
74-87-3	Chloromethane	ing the state of the	Not Detected	5.0		- 1.0 (47%-1168-117-118-11991)
156-59-2	cis-1,2-Dichloroethylene	e september	Not Detected	1.0		10
10061-01-5	cis-1,3-Dichloropropylene		Not Detected	1.0		1.0

CAS# : Chemical Abstract Service Registry Number

RL: Reporting Limit
ND: Not Detected

ug / L : microgram / liter (ppb) mg / L : milligram / liter (ppm)

ug / Kg : microgram / kilogram (ppb) mg / Kg : milligram / kilogram (ppm) Laboratory Contacts



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA42671 M9-L1

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•	/ 411		14		NM	m	11 N	nc.

Analytical Met	hod: 8260	Date Tested:	10/24/2004	Analyst:	PCR	
CAS#	Compound		Result ug/L	RL	Qualifier	Dilution Factor
124-48-1	Dibromochloromethane		Not Detected	1.0		1.0
74-95-3	Dibromomethane		Not Detected	1.0		1.0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
75-71-8	Dichlorodifluoromethane		Not Detected	5.0		1.0
60-29-7	Diethyl ether		Not Detected	5.0		1.0 (1.0)
100-41-4	Ethylbenzene		Not Detected	1.0	and the second of the second	1.0
67-72-1 98-82-8	Hexachloroethane		Not Detected	- 5.0° - 5.0° -	人。我们的生活,并必要是	
98-82-8 108383,106423	lsopropylbenzene m & p - Xylene		Not Detected	1.0 2.0	en e	1.0 1.0
74-88-4	Methyl iodide		Not Detected Not Detected	5. 种类类的 (2.以 作) 1.0	4.14.00 E. 151.1519	, 1:0 ()
75-09-2	Methylene chloride		Not Detected	1.0 1.5.0	Stager Stages	1.0
1634-04-4	Methyltertiarybutylether		Not Detected	1.0		1.0
91-20-3	Naphthalene	e e e divina	Not Detected	5.0	100 X 100 100 100 100 100 100 100 100 10	1.0
104-51-8	n-Butylbenzene	,	Not Detected	1.0		1.0
103-65-1	n-Propylbenzene		Not Detected	1.0		1.0
95-47-6	o-Xylene		Not Detected	0.1		1.0
99-87-6	p-Isopropyl toluene		Not Detected	1.0		1.0
135-98-8	sec-Butylbenzene		Not Detected	1.0	er and the second	1.0
100-42-5	Styrene		Not Detected	1.0	the second section	1.0
98-06-6	tert-Butylbenzene	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Not Detected	1.0 u svek – rekruigse	erina erin erin erin erin erin erin erin erin	- 1.0 - 1.0
1 27-18-4 109-99-9	Tetrachloroethylene Tetrahydrofuran	entre de la propertie	Not Detected Not Detected	1.0 5.0		1.0 (1.0) 1.0
108-88-3	Toluene	1 1 30 30 34	Not Detected	3.0 West 10 -		1.0
156-60-5	trans-1,2-Dichloroethylene		Not Detected	1.0		1.0
10061-02-6	trans-1,3-Dichloropropylene		Not Detected	\$286 and \$1.0 at	30.1 (金属) · 图 400	1.0
110-57-6	trans-1,4-Dichloro-2-butene		Not Detected	5.0		1.0
79-01-6	Trichloroethylene	· "只要是好"。	Not Detected	oli (1974) (1.0e)	albert Albert	1.0 (1.0)
75-69-4	Trichlorofluoromethane		Not Detected	1.0		1.0
75-01-4	Vinyl chloride		Not Detected	1.0		1.0

CAS#: Chemical Abstract Service Registry Number

RL: Reporting Limit
ND: Not Detected

ug / L: microgram / liter (ppb)
mg / L: milligram / liter (ppm)

ug / Kg : microgram / kilogram (ppb) mg / Kg : milligram / kilogram (ppm) Laboratory Contacts



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

M9-L2 Sample Number: AA42672

Analytical Method:	8260	Date Tested:	10/24/2004	Analyst:	PCR	
CAS# Cor	mpound	1	Result ug/L	RL	Qualifier	Dilution Factor
SURROGATE #Br	omofluorobenzene#		101			
SURROGATE #Di	bromofluoromethane#		99.3			
SURROGATE #To	oluene-d8#		99.7	,		
630-20-6 1,1,	1,2-Tetrachloroethane	er en de er jardi	Not Detected	1.0		oi.o
	1-Trichloroethane	1	Not Detected	1.0		1.0
	2,2=Tetrachloroethane		Not Detected	1.0		1.0
	2-Trichloroethane		Not Detected	1.0		1.0
	Dichloroethane		Not Detected	1.0		1.0
	Dichloroethylene		Not Detected	1.0		1.0
· · · · · · · · · · · · · · · · · · ·	3-Trichlorobenzene		Not Detected	5.0		1.0
	3-Trichloropropane		Not Detected	1.0	ter en	1.0
	4-Trichlorobenzene		Not Detected	the contract of the second	5年46,日本中华14	
	4-Trimethylbenzene		Not Detected	1.0 Reconstitutes of a flat of the contract of the	iso , builter a	1.0 -> 2727 November Sont November 2004
	Dibromo-3-chloropropane		Not Detected	5.0	그 하는데 이 동안 함께	1.0
	Dibromoethane		Not Detected	1.0	en e	- 1.0 Magazini, ti kasak bina astroftok (제공) kas
the second second second	Dichlorobenzene		Not Detected	1.0		1.0
	Dichloroethane Dichloropropane		Not Detected	1.0	ualisti – bisabistanda	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5-Trimethylbenzene		Not Detected	1.0		
150 1 111 1010 10 0 0 11 0 10 0 10 0	Dichlorobenzene Dichlorobenzene		Not Detected Not Detected	1.0 1. 0	90 July 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1.0 1.0
A CONTRACTOR OF A MARKET CONTRACTOR OF A SECTION OF A CONTRACTOR OF A CONTRACT	Dichlorobenzene		Not Detected	1.0	er literatur (d. 1901) er er er O	# 1.0 - 1.0
	utanone (MEK)	and the second s	Not Detected		an na lakacasa	1.0
	exanone		Not Detected	5.0	The second of the second secon	1.0
and the second s	lethylnaphthalene		Not Detected	5.0		1.0
	ropanone (acetone)		Not Detected	20		1.0
The second displayer in the second second second second	lethyl-2-pentanone (MIBK)		Not Detected	5.0	AND THE USE	1.0
	ylonitrile	· ·	Not Detected	5.0		1.0
71-43-2 Ben	zene	i orvaliniye	Not Detected	1.0		1.0
	mobenzene	1	Not Detected	1.0		1.0
	mochloromethane		Not Detected	1.0	ilin da a disp	4.0
	modichloromethane		Not Detected	1.0		1.0
The second secon	moform		Not Detected	\$ # 1.0 *	Ar (1)	1.0
and the second second second	momethane		Not Detected	5.0		1.0
	bon disulfide		Not Detected			
the state of the state of the state of	bon tetrachloride	and the second s	Not Detected	1.0		1.0
	orobenzene		Not Detected	A		1.0
	oroethane		Not Detected	5.0		
	oroform		Not Detected	1.0		1.0
	oromethane	the second second second	Not Detected	5.0		
	1,2-Dichloroethylene	• • •	Not Detected	1.0	ja vilos filli	
10061-01-5 cis-	1,3-Dichloropropylene	l	Not Detected	1.0		1.0

CAS#: Chemical Abstract Service Registry Number

RL: Reporting Limit ND: Not Detected

ug / L : microgram / liter (ppb)

mg / L: milligram / liter (ppm) ug / Kg : microgram / kilogram (ppb) mg/Kg: milligram/kilogram (ppm) Laboratory Contacts



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number: AA42672 M9-L2

V	al a	tile	Compounds	
v	1111	1111	Commonunce	•

Analytical Me	thod: 8260	Date Tested:	10/24/2004	Analyst:	PCR	
CAS#	Compound		Result ug/L	RL	Qualifier	Dilution Factor
124-48-1	Dibromochloromethane		Not Detected	1.0		1.0
74-95-3	Dibromomethane		Not Detected	1.0		1.0
75-71-8	Dichlorodifluoromethane		Not Detected	5.0		1.0
60-29-7	Diethyl ether		Not Detected	5.0		1.0
100-41-4	Ethylbenzene		Not Detected	1.0	1724 - 1 - 1 - 1 - 1 - 1	1.0
67-72-1	Hexachloroethane	ters with the first solutions	Not Detected	5.0	可能(PAN)、Turky	-1.0 (Angle) is the series with
98-82-8	Isopropylbenzene	The state of the s	Not Detected	1.0	the state of the second	1.0
108383,106423 74-88-4	m & p - Xylene		Not Detected	2.0		1.0
75-09-2	Methyl iodide Methylene chloride	ing and the second second	Not Detected Not Detected	1.0 (5.0%)	را المنافر المنافر المنافر ولا المنافر ولا في	1.0 8 1:0
1634-04-4	Methyltertiarybutylether		Not Detected	1.0		1.0
91-20-3	Naphthalene	and the second of the second	Not Detected	5.0	X	1.0
104-51-8	n-Butylbenzene		Not Detected	1.0	agraga ger ff en i tigea gat ar e	1.0
103-65-1	n-Propylbenzene		Not Detected	1.0		1:0
95-47-6	o-Xylene		Not Detected	1.0		1.0
99-87-6	p-Isopropyl toluene		Not Detected	1.0	建筑 的 医氯化	1.0
135-98-8	sec-Butylbenzene		Not Detected	1.0		1.0
100-42-5	Styrene		Not Detected	1.0		1.0
98-06-6	tert-Butylbenzene	21 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Not Detected	1.0	grown to a long or way to live	1.0
127-18-4	Tetrachloroethylene		Not Detected	1.0	The house of the	1.0 / / D. / A. / A. / A. / A. / A. / A. /
109-99-9	Tetrahydrofuran		Not Detected	5.0	traaka ku di Marii Au	. 1.0
108-88-3 156-60-5	Toluene trans-1,2-Dichloroethylene	i de de de la companya de la compan La companya de la co	Not Detected Not Detected	1.0	图图·加克克斯 (2016)	[1,0] (1.0)
10061-02-6	trans-1,3-Dichloropropyler		Not Detected	1.0 	Little gade 11,412 v.c. v.c.	1.0 1.0
110-57-6	trans-1,4-Dichloro-2-buten		Not Detected	5.0	registressife in 4 * 2 m m s	1.0
79-01-6	Trichloroethylene		2.2	5.0 - 1.0 %		1.0
75-69-4	Trichlorofluoromethane	м	Not Detected	1.0		1.0
75-01-4	Vinyl chloride	The State of the	Not Detected	1.0		· 1.0

CAS# : Chemical Abstract Service Registry Number

RL: Reporting Limit
ND: Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts



P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-9800 FAX: (517) 335-9600

Sample Number:

AA42673

M9-L3

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Analytical Method:	8260	Date Tested:	10/26/2004	Analyst:	PCR	
CAS # Compo	ound		Result ug/L	RL	Qualifier	Dilution Factor
SURROGATE #Brom	ofluorobenzene#		98.9	•		
SURROGATE #Dibro	mofluoromethane#		99.1		NAMES OF A STATE OF THE	
SURROGATE #Tolue	ne-d8#		98.0		·	
630-20-6 1,1,1,2	-Tetrachloroethane		Not Detected	1.0	Barrier Commence	1.0
71-55-6 1,1,1-T	richloroethane		Not Detected	1.0		1.0
	-Tetrachloroethane	y = (20 - 5)/(50	Not Detected	1.0		1.0
	richloroethane		Not Detected	1.0		1.0
	chloroethane		Not Detected	1.0		1.0
	chloroethylene		Not Detected	1.0	and the second of the second	1.0
	richlorobenzene		Not Detected	5.0		4.0 中分为1.3 研究
	richloropropane		Not Detected	1.0	1904/100 - 1 - 1 - 1 - 1 - 1	1.0
	richlorobenzene		Not Detected	5.0		1.0
	rimethylbenzene	,	Not Detected	1.0	ng talah di kacamatan di kacamatan di	1.0
	oromo-3-chloropropane		Not Detected	5.0		可.00万克,蒙古东户基础
	oromoethane		Not Detected	1.0	n Amerikaanse Sasa in waxay ya y	
	hlorobenzene		Not Detected	1.0		1.0
	chloroethane		Not Detected	1.0	and a second of the entire	1.0
	hloropropane		Not Detected	1.0		1.0
	rimethylbenzene	the state of the state of	Not Detected	1.0	error en	1.0
	chlorobenzene chlorobenzene		Not Detected	1.0		the state of the s
	none (MEK)		Not Detected Not Detected	1.0 5.0		1.0 . 1.0 119 (1997)
591-78-6 2-Hexa		·	Not Detected	5.0	中别国民民的"中"。一个	1.0
	ylnaphthalene	and the second s	Not Detected	5.0		1.0
	anone (acetone)		Not Detected	20	Barana Artinia da	- 1.0 - 1.0
	yl-2-pentanone (MIBK)	and the second second second	Not Detected	5.0		1.0
107-13-1 Acrylo			Not Detected	5.0	Manifest affactive of the Control of Control of	1.0
71-43-2 Benzen			Not Detected	1.0		1.0
	benzene	•	Not Detected	1.0	and a section of the	1.0
74-97-5 Bromo	chloromethane		Not Detected	1.0		1.0 - 15 July 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
75-27-4 Bromod	dichloromethane		Not Detected	1.0		1.0
75-25-2 Bromo	form		Not Detected	1.0		1.0
	methane		Not Detected	5.0		1.0
75-15-0 Carbon	disulfide		Not Detected	1.0		1.0
	tetrachloride		Not Detected	1.0		1.0
	benzene		Not Detected	1.0		1.0
75-00-3 Chlorod			Not Detected	5.0		1.0
67-66-3 Chloro	form		Not Detected	1.0		1.0
and the second s	methane		Not Detected	5.0		1.0
156-59-2 cis-1,2-	Dichloroethylene		Not Detected	1.0		1.0
10061-01-5 cis-1,3-	Dichloropropylene		Not Detected	1.0		1.0

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mg/L: milligram/liter (ppm)
ug/Kg: microgram/kilogram (ppb)
mg/Kg: milligram/kilogram (ppm)

Laboratory Contacts



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Sample Number: **AA42673** M9-L3

V۵	fatila	Compounds	
Y (I	12111	A . CHILLIOCHILLICIS	

Analytical Method: 8260	Date Tested:	10/26/2004	Analyst: PCF	!	
CAS# Compound		Result ug/L	RL	Qualifier	Dilution Factor
124-48-1 Dibromochloron	nethane	Not Detected	1.0		1.0
74-95-3 Dibromomethan	e 1	Not Detected	1.0		1.0
75-71-8 Dichlorodifluoro	methane	Not Detected	5.0		1.0
60-29-7 Diethyl ether		Not Detected	5.0		1.0
100-41-4 Ethylbenzene		Not Detected	1.0		1.0
67-72-1 Hexachloroethan		Not Detected	5.0		1.0
98-82-8 Isopropylbenzen		Not Detected	1.0	1	1.0
108383,106423 m & p - Xylene		Not Detected	2.0		11.0、 图像是表情是17年。
74-88-4 Methyl iodide	AND THE RESERVE OF THE SECOND SECOND	Not Detected	1.0	pariguaget greekering	1.0
75-09-2 Methylene chlor 1634-04-4 Methyltertiarybu		Not Detected Not Detected	5.0		
	rryterner	Not Detected	1.0 5.6% #1.%	X	- 1.0 9 1.0
104-51-8 n-Butylbenzene	inia in kinge kidan di Mayaya da Karana in 1994 di karana di Karana da Karana di Karana di Karana di Karana di Karana di Karana di Karana da Karana da Karana da Karana di Karana da Karana da Karana da Karana da Karana da K	Not Detected	1.0	क्षे 🕰 असे १८४० वर्ष	9) 460) (1905), (1907), (1907) - 1.0
103-65-1 n-Propylbenzene	. Park Str. Name of the	Not Detected			
95-47-6 o-Xylene		Not Detected	1.0	in plant frame and the late	1.0
99-87-6 p-Isopropyl tolu	ene opini karanta ja karanta atau karanta	Not Detected	1.0		
135-98-8 sec-Butylbenzen	•	Not Detected	1.0		1.0
100-42-5 Styrene		Not Detected	1.0	[[日本的][[[]]]]	1.0
98-06-6 tert-Butylbenzen	e	Not Detected	1.0		1.0
127-18-4 Tetrachloroethyl		Not Detected	1.0		1.0
109-99-9 Tetrahydrofuran		Not Detected	5.0	the section of the se	1.0
• • • • • • • • • • • • • • • • • • • •		Not Detected			
156-60-5 trans-1,2-Dichlo		Not Detected	1.0	et om to out 1888 restauret in 1987.	- 1.0 Matakan di manangan beritang merendakan
10061-02-6 trans-1,3-Dichlo		Not Detected	1.0	ANTERNA PROPERTY	
110-57-6 trans-1,4-Dichlo		Not Detected	5.0	anelet 1998 a	- 1.0 1140 6 72 5 - 2 3 2 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
79-01-6 Trichloroethylen 75-69-4 Trichlorofluoron		Not Detected Not Detected	1, 0		9 1,0 17
75-01-4 Vinyl chloride	nemane	Not Detected	1.0		1.0 1.0
o. i	ett kan en en ett i som en	. tor Detected	or state of the setting of the sett	emilional control	return of the second of the second

CAS#: Chemical Abstract Service Registry Number

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ug / Kg: microgram / kilogram (ppb)

mg/Kg: milligram/kilogram (ppm)

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Qualifier Code	Qualifier Description			
J	Result(s) and RL(s) are estimated due to low surrogate recovery.			
2	Result is estimated due to high surrogate recovery.			
3	Result(s) and RL(s) are estimated due to low matrix spike recovery.			
4	Result is estimated due to high matrix spike recovery.			
5	Result and RL are estimated due to low continuing calibration standard criteria failure.			
6	Result is estimated due to high continuing calibration standard criteria failure.			
7	Result(s) and RL(s) are estimated due to poor precision.			
8	Result(s) and RL(s) are estimated due to low recovery of batch QC.			
9	Result outside QC acceptance criteria.			
A	Value reported is the mean of two or more determinations.			
С	Value calculated from other independent parameters.			
D	Analyte value quantified from a dilution(s); reporting limit (RL) raised.			
Е	Result is estimated due to high recovery of batch QC.			
F	Free cyanide was not analyzed due to low level of total cyanide.			
G	Result and RL are estimated due to initial calibration standard criteria failure.			
Н	Recommended laboratory holding time was exceeded.			
I	Dilution required due to matrix interference; reporting limit (RL) raised.			
J	Analyte was positively identified. Value is an estimate.			
JA	Result is estimated due to multiple Aroclors present.			
JC	Result is estimated since confirmation analysis did not meet acceptance criteria			
JD	Due to severe degradation, specific Aroclor identification is difficult and quantitation is estimated.			
ĸ	RL(s) raised due to matrix interferences.			
KR	RL(s) raised due to low sample volume submitted.			
KS	RL(s) raised due to low total solids.			
KW	RL(s) raised due to light sample weight.			
LB	Reported library search compounds are tentative identifications with estimated concentrations.			
М	The level of the method preparation blank (MPB) is reported in the qualifier column.			
N	Non-homogeneous sample made analysis of sample questionable.			
O	Result and RL estimated due to analysis from an open vial.			
P	Recommended sample collection/preservation technique not used; reported result(s) is an estimate.			
Q	Quantity of sample insufficient to perform analyses requested.			
R	Result confirmed by re-extraction and analysis.			
S	Supernatant analyzed.			
Т	Reported value is less than the reporting limit (RL).			
V	Value not available due to dilution.			
W	Reported value is less than the method detection limit (MDL).			
X	Methods 8260 & 624 are used to analyze volatile organics that have boiling points below 200°C.			
	2-Methylnaphthalene & naphthalene have boiling points above 200°C and are better suited to analysis			
	by methods 8270 or 625 as semivolatile organics.			

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ug / L : microgram / liter (ppb) mg / L : milligram / liter (ppm) ug / Kg : microgram / kilogram (ppb) mg / Kg : milligram / kilogram (ppm) Laboratory Contacts